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Railway Age

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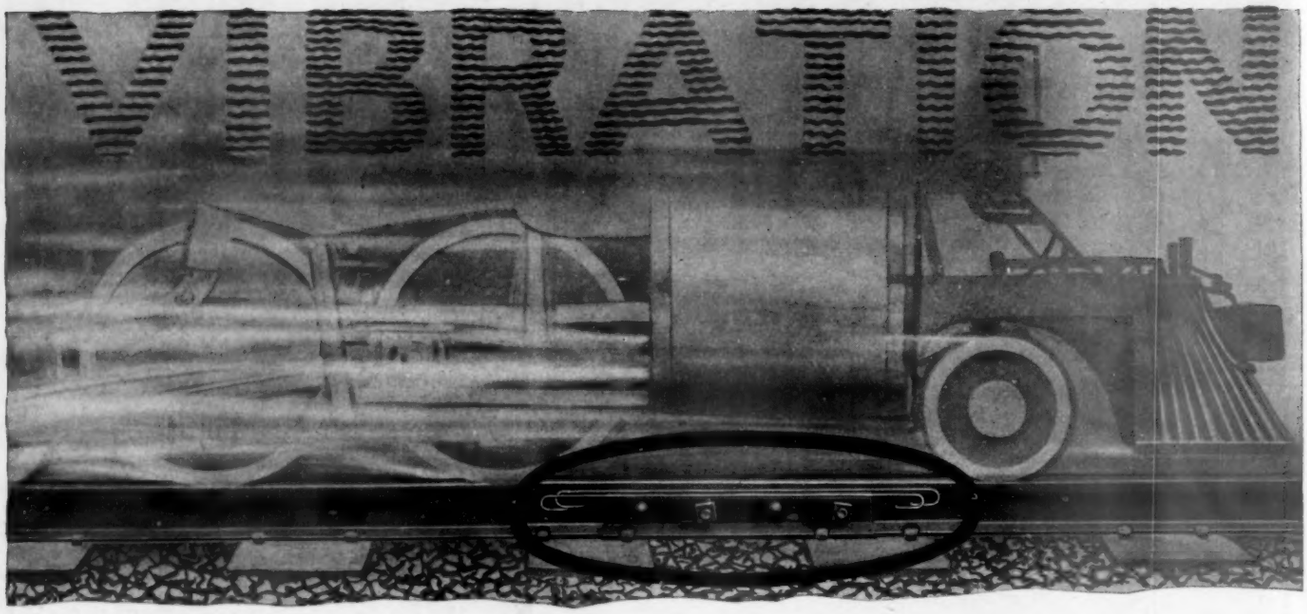

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EDITORIAL
Railway Age

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Radicalism More Dangerous to Public Than to Railroads

BOTH THE SHIPPING and producing public and the railroads may well feel alarmed at the results of the recent election. In the opinion of the *Railway Age,* however, the owners of railway securities and the managers of railways are manifesting more fear than is justified, while the producing and shipping public is showing a much smaller degree of concern than it should.

The recent election will send more extreme radicals to Congress than any election in many years. Indications are that they will hold the balance of power. They seem practically unanimous in favor of repeal of all provisions of the Transportation Act which were intended by its authors to be constructive and to cause an adequate revival of the expansion of railroad facilities. It appears by no means improbable that the Transportation Act will be seriously emasculated when the recently elected Congress meets.

In a speech in the Senate on November 23 Senator Arthur Capper of Kansas, in referring to a recent editorial in the *Railway Age,* said: "The opinion held by the *Railway Age* is not shared by the stock market nor the 'ticker' news. The discussion in regard to lower railroad rates has been going on for more than a year, and some reductions have been made; yet in Wall Street railroad stocks have risen something like 50 per cent within 12 months."

Since Senator Capper has selected the prices of railroad stocks as the barometer of expert opinion regarding the future of the railways we suggest that he include in his comparison the changes in the prices of railroad stocks which have occurred since November 4, three days before the election. In the first place it is not true as Senator Capper stated that railroad stocks have risen something like 50 per cent within 12 months. There were 34 railroad common stocks which were quoted in the stock market reports on November 5, 1921, November 4, 1922, and November 27, 1922. The average price of these stocks on November 5, 1921, was $48.12½ and on November 4, 1922, it was $61.50, an average increase of $13.37½ a share, or about 27½ per cent. The average price of these stocks on November 27, 1922, was $54.75, a reduction since November 4 of $6.62½ a share. Thus in three weeks after the election the decline in the average price of railway stocks wiped out one-half of all the advance in price that had occurred in the preceding year. The declines have ranged from less than $2 to $21.50 a share.

This is the answer made by the stock market to Senator Capper's claim that in spite of the agitation for further reductions of freight rates the prices of railway securities have been advancing. The results of the election have been interpreted as converting what had been an agitation for lower rates into a direct threat of the adoption of a worse policy of railway regulation than the country ever had before.

There is, however, a consideration of the greatest importance with which owners of railway securities and managers of railways may comfort themselves. This is that while a radical Congress can destroy the constructive provisions of the Transportation Act it cannot repeal the Constitution of the United States. Regardless of what may be done to the Transportation Act, the constitutional provisions which prohibit confiscation of property, and which protect the property of a railroad the same as all other property, will still remain in effect. Now, the fact is that the very narrowest possible interpretation of these constitutional provisions would not under present conditions warrant any general reduction of railway rates.

An argument made a year ago for general reductions was that the rates were so high the traffic could not move under them. This argument was based upon the fact that there had been an enormous decline of business since the rates were made. This argument, however, cannot now be used, because during the last eight weeks for which statistics are available the amount of freight that actually has moved on the present rates has been larger than the amount ever before moved on any rates in any eight weeks in history.

The right of the railways to earn a "fair return" upon their valuation, so long as their rates are not excessive *per se,* was not created by the Transportation Act, but by the Constitution as interpreted by the courts. The Interstate Commerce Commission has held that a "fair return" on the valuation of the railways under present conditions would be 5¾ per cent. In view of all past decisions it is most doubtful whether any federal court would hold that the railways could constitutionally be restricted to a smaller return than this. It also seems most doubtful whether the courts would hold excessive the valuation made by the Interstate Commerce Commission for any group of carriers. In the first nine months of the present year the railways earned a net operating income of only $529,400,000, or but 3.96 per cent upon their valuation. Under the ruling of the commission the railways were entitled to earn during this period a net operating income of $770,000,000, or 45 per cent more than they did earn.

The only logical conclusion is that the railways, not merely under the provisions of the Transportation Act, but under the provisions of the Constitution itself, are entitled to earn a larger return than they have been earning, and that if the state commissions, or the Interstate Commerce Commission, or Congress itself should attempt to make reductions of rates which would reduce, or even prevent an

increase of the present net return, the railways probably could defeat this effort by appealing to the courts. The present operating expenses of the railways, owing to the shop employees' strike and the high price of coal resulting from the coal strike, are abnormally high, and should decline and present indications are that traffic will continue to be heavy. Therefore, an increase of railway net operating income seems probable in spite of all the efforts which may be made by the radicals to compel unwarranted reductions of rates.

There is, however, a real danger in the situation. Until the Transportation Act was passed the policy of regulation systematically pursued was that of restricting the net return earned by the railways to the lowest point that would not result in actual confiscation. Under this policy the expansion of railroad facilities steadily declined. The result is that at present the railways are wholly unable to handle the traffic offered to them, and that as the country's production and commerce try to increase the inadequacy of transportation becomes constantly more acute. The adoption of the provisions of the Transportation Act represented an effort by Congress to establish a policy of regulation which would cause an adequate revival of railroad expansion. The repeal of these provisions would result in a return to the restrictive, "near-confiscation" policy of regulation which prevailed before government control and would inevitably prevent the revival of railroad expansion which is essential to enabling the railways to handle the country's commerce. The adoption of such a policy probably would not prevent the railroads from maintaining and substantially increasing the net return now being earned by them, but it would prevent them from making the increases in their facilities essential to enabling them to handle the country's commerce.

If the radicals who have been elected to Congress succeed in carrying out the program of railroad legislation they favor it will not in the long run make the financial situation of the railways any worse than it is now, or even prevent it from improving, but it will make the situation of producers and shippers constantly worse and worse. There are constitutional provisions which can be invoked to prevent general reductions of rates until the railways as a whole are earning larger returns. But there are no constitutional provisions which can be invoked to save farmers, manufacturers and other producers from the enormous losses which they will be caused if transportation continues to become more inadequate.

The radicals who have been elected to Congress are a menace to the railroads; but they are a far greater menace to the prosperity of those who elected them.

The Opportunity of the Mechanical Division

LESS THAN A MONTH has passed since the Mechanical Division of the American Railway Association announced its decision to hold only a business meeting in 1923. In that short time, however, conditions on the railroads have changed so greatly that it is certain if the Executive Committee were to meet now it would have far less reason for calling off next year's convention. Weekly car loadings have now decreased 50,000 cars from the high point reported three weeks ago. Bad order equipment has been rapidly reduced and the roads are entering the winter in much better circumstances than could be anticipated even at the beginning of last month.

This indicates that the handicap under which the mechanical department has been working, is being overcome and the officers will soon be able to give more time to their committee work. It would, of course, be difficult to make up for postponed committee meetings, but the value of reports does not depend so much on the number of meetings a committee holds, or the length of time it deliberates as on the ability and experience of its members. Individual papers on many subjects may be more valuable than the findings of an unwieldy committee. If the subjects which are of the greatest importance at this time could be referred to some of the leading mechanical officers, very valuable papers could be presented when the division meets next June.

In recent issues the *Railway Age* has called attention to the opportunity which the present railway situation offers for constructive work by the Mechanical Division. The problems that might be discussed are so numerous that it should be easy to arrange a program that would appeal to every railroad officer and to every road. The subjects that have been mentioned in previous editorials by no means exhaust the topics as is evident to anyone who comes in contact with the important every-day problems of the mechanical department.

For example, the American Society for Testing Materials has been exposing various kinds of iron and steel sheets to determine the relative corrosion of different materials. Where some of the common types of steel failed completely in sixteen to twenty-two months, sheets of different composition were all sound after forty-six months and 63 per cent were sound after sixty-four months. These results have such an important relation to selection of sheets for freight cars that the railroads should make tests to determine as quickly as possible whether the same decrease in corrosion will be obtained in equipment under actual service conditions.

Long locomotive runs as a means of getting increased utilization from equipment is another important subject in which the railroads are vitally interested. Some roads apparently are getting good results from increasing the length of runs; others have tried this practice and have given it up.

The railroads that are still waiting to experiment with long runs would benefit greatly if they could learn what factors have influenced the success or the failure of this practice where it has already been tried.

There is probably no road in the country which is not anxious to learn the results obtained with new types of locomotives now in service. What effect have radical innovations in design had on the cost of operation? What savings in fuel and in wages of train crews have been affected? What is the cost of maintenance and what monthly mileage can reasonably be obtained from these locomotives? The

Mechanical Division can perform an important service to the roads by presenting information on these matters.

Many roads have now and will have for some time to come large numbers of bad order freight cars. In some cases entire classes require extensive repairs or rebuilding. Methods of scheduling and systematizing this work have proved very effective in reducing costs. The Mechanical Division Committee on Scheduling and Routing Systems could make its report extremely valuable by outlining the best practices and showing the results that have been obtained from centralizing and systematizing car repairs.

It is of the greatest importance that these matters should be discussed before the Mechanical Division by the men who have the most thorough knowledge of the subject. It is immaterial whether committee reports or individual papers are submitted. The important point is that the Mechanical Division has an unusual opportunity to build up a program for its Chicago meeting that will be so constructive that it will give a new impetus to the annual gathering of the mechanical department officers.

The "Veri-Direct" Method of Loading Freight

"Very Correct" would seem to be a suitable designation for the new plan for checking the loading of freight into cars from freight houses, illustrated in an article on another page, which is in use on the Erie Railroad in Ohio. This plan has been described to us by C. G. Johnson, of Youngstown, whose name will be recalled as that of the author of an interesting prize article on loading freight which was printed in the *Railway Age* of November 26, 1915. Mr. Johnson's plan certainly seems calculated to call the blunderer to account, not only at every turn, but at numerous points between turns. The salient point in his story is that he is extending the use of his plan because it is profitable, and proves its profitableness.

Care Needed in Buying Used Machinery

As a rule it is doubtful economy for railroads to purchase second-hand machine tools. Almost certain loss will result if these tools are bought without extremely careful investigation and inspection. The truth of this statement is indicated by the experience of a railroad which was in the market recently for two turret lathes. An order was placed with a prominent manufacturer, but later cancelled when a dealer offered two second-hand machines at a considerably reduced price. The manufacturer was naturally desirous of holding the business, and looked up the serial number of the two turret lathes. It was discovered that the lathes had been working on three eight-hour shifts in a Canadian shell plant since 1914, and were decidedly the worse for wear. On learning this fact the railroad reinstated its order for two new machines, thereby displaying sound judgment. There is enough worn-out machinery in the average railroad shop without installing additional machines which have already given their best service. The difficulty with second-hand machinery is in detecting worn parts and determining how much usefulness may still remain. A reliable opinion cannot be formed without disassembling and inspecting practically every vital part of the machine, and even then, competent inspectors sometimes overlook serious flaws. Machine castings frequently warp in aging, so that the ways and other guiding surfaces get out of alinement. In other cases, machines are used in repetition work in which certain gears or parts are subject to undue wear, whereas the rest of the machine is practically new. Large industrial manufacturers do not consider it safe or a good investment to buy second-hand machinery unless they know all about it, and the railroads should be equally cautious, bearing in mind that "First use is best use."

Employees and the Public

Improved employee relations is intimately associated with improved public relations of the railroads. Indifferent employees, not properly trained and inspired, cause needless irritation and even anger on the part of patrons of a railroad. It is doubtless, also, one of several things that result in keeping the possible traffic of the roads as a whole to a minimum. This is emphasized in an article elsewhere in this issue, entitled, "Do American Railways Lack the Selling Sense?" Indifference and ignorance on the part of employees is directly chargeable to the managements. It cannot be corrected unless those in authority fully appreciate the fact that the directing of men is a highly specialized problem—the greatest problem confronting American railroads and industries today. Conditions change steadily and rapidly in this old world of ours and men cannot be handled today as they were even a decade ago. No field of endeavor presents greater possibilities than this. Changing an organization from a spirit of ordinary or average interest, or from a spirit of indifference, to one of intense loyalty and enthusiasm, has tremendous possibilities. What could not American railroads do today if this condition could be brought about? It can be done!

What Is the Future of Apprenticeship?

Industrial conditions are constantly undergoing change. This is a fact so obvious that its statement in the abstract seems hardly worthy of attention, and yet when its specific application close at home suddenly forces itself on the attention, its recognition comes with something of a shock. It is becoming evident that the conditions affecting apprenticeship in railway shops are no exception to this rule. Considerably less than a generation ago applicants for apprenticeship were so numerous that considerable selection was possible. As a result it became an established rule that sons of employees be given preference and the fear of an over-supply of mechanics led the labor organizations to take an active interest in limiting the number of apprentices. In the national agreement negotiated with the United States Railroad Administration these organizations succeeded in limiting the number to one for each five mechanics. But now it is becoming evident in many cases that there is no occasion for the application either of the rule giving preference to the sons of employees or that limiting the number of apprentices, for the reason that the sons of employees apparently do not consider the opportunities of apprenticeship attractive and other applicants do not present themselves in sufficient numbers to keep up the one to five ratio. This tendency is reflected in the increasing age limits for regular apprentices in newly negotiated agreements and in the complete removal of the upper limit in the case of helper apprentices. A number of questions are suggested by this situation that are worthy of the thoughtful attention of railway executives. Are the highly specialized processes of modern industry, paying comparatively high wages after short periods of training, more attractive to young men than the future offered by the railroad shops after a long period of training? If so, can the railroads successfully depend on the promoted helper and handyman for their future supply of mechanics? If not, how shall they modify

the conditions of railway shop employment to compete successfully with other occupations? Will it be possible to depend more and more on the specialist and less and less on the all-around mechanic? Answers to these questions are necessary before the railroads can formulate comprehensive plans for satisfactory shop conditions in the future.

Earnings in October

In September the Class I railroads reported a net railway operating income of $58,457,464. This compared with $87,606,375 in September, 1921. In other words, there was a decrease of $29,148,911 or 33.2 per cent. The reason for the decrease in net was an increase in operating expenses, shown by the size of the increase in expenses for maintenance of equipment—$16,262,268 or 15.7 per cent—to have been due to the cost of the shopmen's strike. Such of the monthly earnings for October as have been given out up to the present indicate that the October figures will show a considerable improvement over those for September but, on the other hand, it is rather unlikely that the October net railway operating income will come anywhere near equalling the October, 1921, figure which totaled about $90,000,000. Earnings for a number of typical roads follow:

NET RAILWAY OPERATING INCOME

Road	Oct., 1922	Inc. or Dec. compared with Oct., 1921	Ten mos., 1922	Inc. or Dec. compared last year
Baltimore & Ohio....	$3,081,157	—$341,340	$15,572,377	—$3,121,317
Boston & Maine.....	624,244	—205,102	5,749,109	7,126,462
Chicago, Milwaukee & St. Paul.....	2,224,314	— 285,833	10,205,385	5,124,491
Gulf Coast Lines.....	294,568	84,274	2,317,922	554,126
Illinois Central.....	3,204,458	900,506	21,176,121	5,051,505
Lehigh Valley.....	Def.635,865	—1,746,799	104,967	— 3,719,266
Maine Central.....	162,150	—30,323	2,030,695	2,307,752
New York Central....	5,362,344	—655,858	39,997,455	129,744
New York, New Haven & Hartford.....	1,121,631	—364,320	10,982,099	12,515,327
Pennsylvania Railroad	4,190,096	—1,964,140	61,245,197	31,615,398
Union Pacific System	5,406,573	—1,048,023	25,285,815	—4,690,288

Railway stocks have recently experienced some rather trying vicissitudes on the stock exchange. The *Railway Age's* average of 20 representative railway stocks was reported in last week's issue as being on November 21 at 66.67, or approximately 7½ points below the peak of 74.16 which was reached on September 12. Of course, rail stocks have not been the only ones which have suffered a decline in the past two months. The decline has been a general one. The rail shares seem, nevertheless, to have suffered a loss of some of their late popularity. This may be partly due to the fear of adverse legislation but there can be no question that the decline in their value and the drag on the recovery of that value on the exchange has been due primarily to the expected effect of the strike on earnings. It is unfortunate that the carriers—as in 1920—have been unable to realize more adequately on the peak business in October.

Utilize the Traffic Man

There is now more freight awaiting movement than the railways are able to handle. With the car shortage already the largest in history, the indications are that it will continue to increase as we enter the winter. With this condition there is now no necessity for the solicitation of additional immediate business and the best argument with which to solicit future traffic is to render the best possible service now. This suggests the importance of the employees of the freight traffic department concentrating their activities on the promotion of freight movement. Much can be done by personal calls on shippers to enlist their co-operation in loading cars to capacity and in releasing them, loaded or empty, in the shortest possible time. In many instances the traffic representatives can aid in devising ways of loading cars more nearly to capacity or more quickly. The problem of car movement is primarily that of keeping the individual car in motion. This requires intensive supervision of industry tracks, team tracks, side tracks and yards. Where the forces of the operating department are insufficient to provide this intensive supervision, traffic employees may be utilized to good advantage. They can aid the car-distributor. The public is now demanding that the railways move a traffic in excess of their capacity and the interests of all departments should be subordinated to the one objective of meeting this demand as fully as may be physically possible.

Facts on the Economics of Signaling

Some railway managements have been doubtful of the possibilities of effecting economies in operating costs by the installation of signaling equipment. The report of the committee on Economics of Railway Signaling, of the Signal Section of the A.R.A., abstracted in the *Railway Age* of November 25, page 983, contains facts worthy of careful consideration by such roads. For example, a study of 71 different distant control electric switch machine installations for the operation of outlying switches showed an annual saving of from $2,500 to $8,700 for each location, while one road saved $5,000 in operating costs each year from a $2,000 installation of automatic interlocking control apparatus. The report is so full of such data regarding the savings effected by automatic signals, automatic highway crossing protection and combined interlocking facilities, that railway officers confronted with the problem of increasing the capacity of certain lines may well give these figures serious attention. Better yet, a committee consisting of a signaling and an operating officer should be directed to make an extensive investigation of the possibilities of automatic signals, interlockers and outlying switch machines on congested divisions and the increase in track capacity that can be expected. As shown by this report it is possible to secure tangible evidence of the economies produced by signaling, and in view of the comparatively small cost of such studies it would appear advisable for the railroads to undertake such investigations as soon as possible while the recent congestion is still fresh in their minds.

Showing Equipment Rents

In last week's issue of the *Railway Age* some figures were given which showed that Mr. Ford's railroad, the Detroit, Toledo & Ironton, had for the nine months ended September 30, 1922, a net after taxes of $1,016,301, but for the same period, a net after rents of only $5,650. The September figure showed a deficit after taxes of $233,982. Net after rents for the month, through a typographical error, was shown as a net of $383,097. It should have been shown with a minus sign and as a deficit, which would, in addition, show that Mr. Ford's payments for equipment and joint facility rents ran in September at about $150,000. The editorial in which these figures appeared was not intended so much to point out the principal reason why Mr. Ford has thus far been unable to make his D. T. & I. property show the wonderful net earnings which we were all led to expect—because of the unusual amount of publicity which surrounded his purchase of the road—were going to be realized. They did point out the reason, to be sure, and in somewhat unmistakable terms, the reason being, of course, that the D. T. & I. is something of a slacker when it comes to having an adequate car supply. The intent of the note, however, was to

point out how much more adequate net earnings of a railroad can be shown if they are carried down as far as net after rents, or net railway operating income, instead of only down as far as net after taxes or railway operating income. In the D. T. & I. we have an extreme example to prove this contention. It should not be thought, however, that because it is such an extreme case it is not a proper one to use. It would be easy to quote figures of other and more typical roads which would bring out a similar relationship. Students of railway figures have been somewhat reticent in recognizing the effect that hire of equipment and joint facility rents may have on railway net. They should realize that these items may in cases be as important indexes as the operating ratio or other of the various figures which are usually given leading importance. All of which is further argument in favor of the railways reporting the net after rents figure in their monthly and annual statements.

The "Peak Load" and Capital Expenditures

THE CRUCIAL TEST of the capacity and efficiency of a railroad's plant and organization is applied when it handles the largest traffic which it can move. This tests the amount of business that, under the conditions existing, the railroad can handle. It also tests the economy with which under the conditions existing, the railroad can operate. Therefore, when a railroad has just handled the peak load of business is the best possible time thoroughly to study its plant and organization and locate the limiting factors in the plant and the weak spots in the organization. Of course, what has been said applies to any business concern or man. The real test of a man comes when he is called upon to meet the greatest demands on his talents and character.

The railways of the United States recently have had offered to them the largest freight business in history. The peak load of their annual business usually comes in the fall. In the eight weeks ended on November 11 they handled a slightly larger freight business than in any previous year. The total carloads of freight loaded and moved in the eight weeks ended November 11, 1920, was 7,863,858, while in the eight weeks ended November 11, 1922, it was 7,880,286. The inequality between the total demand for and the supply of transportation was, however, greater than ever before. Some railways could have handled more traffic, but a large majority moved all the freight they could and still fell far short of meeting the demands. Some railways earned more net operating income while handling the peak load this year than ever before. A large majority fell far short of equalling their best net earning records of previous years. The principal explanation of these facts is that some railways have made relatively greater improvements in their plants and organizations within recent years than others.

All indications are that for some time to come the demands upon the railways for the movement of freight will be extraordinarily large. The seasonal decline of business has come, but it has come later than at any time in recent years, and the decline has thus far been less than in any recent year. Now that on most lines the peak load has passed for a while, it behooves the management of every railroad to make a careful survey of its physical property and organization to determine, as indicated by the way the peak load has been handled, exactly what are the conditions on the physical property and in the organization which have most seriously interfered with the handling of the traffic, and handling it with the greatest practicable economy.

If the limiting factors have been conditions of the physical property, plans for capital expenditures should be so made as to remedy, first, the particular conditions of plant which have interfered most with handling the business, or handling it with maximum economy. Some railways have available only very small amounts of money for physical improvements. Others have available relatively large amounts. Experience shows however that the way in which new capital is invested is almost, if not quite, as important as the amount invested. Nobody can study the capital expenditures made and the operating and financial results obtained by different railways within the last ten years without concluding that some railways have secured much larger results in the form of net earnings from given amounts of capital expenditures than others. An eminent American economist has said that the ability to make investments wisely is the rarest form of business ability. The present earning capacity of most railways has been very largely determined, and their future earning capacity will be very largely determined, by the judgment shown in making capital expenditures.

Has the handling of the peak load this fall shown that the principal limiting factor in a railroad's capacity and operating efficiency has been inadequacy of equipment, or inadequacy of tracks, terminals, roundhouses and shops? There should be a steady increase in ton-miles for each locomotive actually in service, and this increase should be at least proportionate to the increase in tractive power. Do the statistics of a railroad show that in handling the peak load the increase in the ton-mileage per locomotive was not proportionate to the increase in average tractive power per locomotive within, say, the last five or ten years? If not, was this due to the condition of the locomotives, or to the fact that the improvements which have been made in track capacity or engine terminal facilities or in signaling or in operating methods have not been sufficient to make it possible fully to utilize the increased tractive power? If permanent structures and operating methods have not been so improved as to make possible full utilization of increased tractive power, it is evident that what is needed are improvements in other facilities and operating methods. Many railways in the past have acquired better and more powerful locomotives faster than they have improved the facilities and operating methods for utilizing them, and in consequence part of the increased power has been wasted. The conditions on such railways obviously suggest the need for capital expenditures and operating improvements which will give the locomotives an opportunity to do all the work for which they were bought.

A shortage of transportation is always reflected in the form of what is called a "shortage of cars." But is your railroad really short of cars? Do the statistics show an increase in average miles per car per day and in average tons per loaded car within recent years? The real test of freight car efficiency is the average number of ton-miles per car per day when the peak of the business is being handled. Any railway whose statistics do not show an increase in ton-miles per car per day for cars in serviceable condition in a period of maximum traffic is not increasing its operating efficiency as much as is practicable. This may be due to inadequacy of power, to inadequacy of terminals, to failure to induce shippers to increase the loading of cars and expedite loading and unloading, or to lack of supervision which will keep every car moving.

Investigation may show that the capacity of an entire division of a railroad, or even of the entire railroad is limited by congestion upon a particular part of the line. This congestion may be due to the existence of a stretch of single track the demands upon which exceed its capacity. If this is the case, should this part of the line be equipped with automatic block signals or double tracked? Often the installation of an automatic block system on a single track line will so increase its capacity as to postpone the need for the

larger capital expenditure that would be required to double track it.

Perhaps the limiting factor in both capacity and economy of operation is a grade the reduction of which would make it possible to handle longer trains over an entire freight division. Of all the improvements which have been made in the railways of the United States, none have contributed so much toward enabling them to increase their capacity with a minimum increase of both capital and operating costs as those which have enabled them to handle more tons per train. There have been great differences in the extent to which different railways have made such improvements. Statements are often made to the contrary, but nobody with a knowledge of the underlying facts can study the statistics of the various railways and escape the conviction that there are still many railways which could largely increase their capacity and reduce their operating expenses by concentrating their efforts more upon improvements in their physical plants and operating methods which are needed to increase the average train load.

The railways in 1922 have made much larger capital expenditures for equipment and additions and betterments than they did in 1921. Information which the *Railway Age* is gathering and which will be published in a later issue shows that they are planning to make relatively large capital expenditures in 1923. The traffic demands, however, are so great as to make it evident that no amount of capital expenditures which can be made will put them abreast of the demands of commerce and of the necessity for more economical operation for years to come, unless capital expenditures shall be made only after the most careful study to determine where the investment of a given amount of money will produce the very greatest possible result. This means that it is almost as important as it was during the war to restrict to the lowest practicable minimum the investment made in improvements which will not increase capacity or reduce the cost of operation, and to study with the utmost thoroughness the experience recently gained in handling the peak load so as to determine as accurately as is humanly possible just what improvements will yield the greatest results. Each individual railroad is an enormous existing property with an enormous existing investment. The vital problem to be solved is what particular improvements will have the greatest effect in increasing the capacity of the property already in existence and in increasing the net return earned upon the existing investment.

Under such conditions as have prevailed in the railroad business for the last ten years it has required not only rare knowledge and judgment to determine the exact places where capital expenditures should be made, but unusual moral courage to make them. There is always real danger that a costly improvement will not produce the effect expected upon the net return earned. Examples might be cited of large investments which have been made in individual railways within the last ten years which have not increased their ability to earn net return as was expected, and which have so increased fixed charges that they have almost ruined the railroads making them. But in a country such as the United States where conditions change and production and commerce increase with great rapidity, it is even more dangerous for a railroad management to lack the courage to make capital expenditures which are needed and which it is financially able to make, as to make them and take the risk that they will not turn out well. There are few railroads so poor that they cannot raise some capital to invest in improvements. In many cases poor railroads have slowly but surely become rich because their managements have shown rare wisdom in selecting the exact improvements which would pay the best, and courage to go ahead and make them as rapidly as they could.

The greatest increases in capacity and economy of operation always have been and always will be mainly due to wise and courageous investment of capital, and the experience of recent months should be the best possible aid to each management in determining where, and in what facilities, such capital as is available should be invested.

Don't Wait Until Spring

IF PRESENT INDICATIONS form any index of what may be expected next year, the railways in common with other large employers are facing a shortage of labor. At the same time many roads are planning large programs of improvement work for next season which will make their requirements for labor greater than in the year now closing. This condition points to the necessity of reducing next summer's peak demands for labor to the minimum. This can be accomplished by doing as much work as possible during the winter and by starting that which cannot be done during this season as early in the spring as possible.

With reference to the first suggestion, the railways are the victims of a long-established, self-imposed habit of reducing their forces to the minimum during the winter and of crowding all but the routine patrol into a summer peak load.

When there was a large surplus of labor this was the easy and perhaps the economical thing to do, but as this surplus has disappeared and maintenance-of-way work has become more complicated, this economy has vanished. Much maintenance work is admittedly seasonal in character and can be done only when the frost is out of the ground, but those roads which have really studied the problem have found that more work can be done during the winter than is commonly performed. Furthermore, much of this can be done with little or no addition to the forces and thereby constitutes a clear gain. In view of the indications that the railways will not be able to secure all of the labor necessary for their improvement programs next spring, and the further indications that the traffic and the earnings will continue at a high point throughout the winter, it would seem the prudent course to make a survey of that work which can be done as economically now as in the summer and get it out of the way in order that forces which are thus productively employed throughout the winter may be diverted to the strictly seasonal work at the first approach of spring weather.

The second suggestion, that of starting the seasonal work at the earliest opportunity, may at first seem premature at this time, but unless plans are initiated promptly the program will not be perfected and materials and forces assembled at the appointed date of starting. Some railways already have their plans for next year's work well in hand with the intention of launching them as early as possible, and thereby securing their quota of men and materials. In times of shortage of labor other roads, must of necessity, take what is left, to their disadvantage.

Many railways have suffered in recent weeks from a lack of facilities which have not only limited the amount of traffic which they could handle but have increased their operating costs. Much construction work of necessity interferes to a greater or less extent with operation and the longer the period over which this work can be distributed, the less is the seriousness of this interference. The policy of starting maintenance-of-way work early is therefore not alone one of economy affecting the maintenance-of-way department, but it is likewise to the interest of the operating department that this work shall be so handled as to decrease the interference with traffic to the minimum and to bring the improvements to completion at the earliest possible date in order that they may be utilized.

Letters to the Editor

[*The* RAILWAY AGE *welcomes letters from its readers and especially those containing constructive suggestions for improvements in the railway field. Short letters—about* 250 *words—are particularly appreciated. The editors do not hold themselves responsible for facts or opinions expressed.*]

The Car Distributor

BROOKFIELD, MO.

TO THE EDITOR:

I have had a number of letters from readers of the *Railway Age* relating to my communication entitled, "Get Better Service from Freight Cars," which appeared in your issue of September 9, page 458. You may be interested in having some additional information which is suggested by questions which have been propounded to me.

Any railroad employee or officer who is in the operating department knows full well that car distribution everywhere is a feature of railroading which is given very little attention, as it is supposed to be a side line of dispatching trains; a duty divided between yardmasters, trainmasters, agents, yard clerks and others. When a car shortage occurs these people are appealed to to get busy and keep cars moving, and to unload; but you very seldom hear any one say anything about distribution, and what relation it has to the shortages, movements and release.

From ten years' actual experience and experiments on the Chicago, Burlington & Quincy and from observations on about all the important railroads in the United States during my several years as inspector for the A. R. A., I found that the thing uppermost in the mind of everybody was to hurry release of cars, obey car service rules when practicable, and to hurry movement; but never was anything said about the distribution.

The car distributor is like the army officer in the field. If he is competent, he distributes his soldiers where he will get 100 per cent service out of them; the same with a car distributor. If he is a competent, experienced man he will get 100 per cent service out of the cars. Please bear in mind that if a car is delayed at a station; if two cars are furnished on an order for one, or a car furnished where one is made empty or none furnished because the yardmaster failed to switch it out; or a coal car not moved because the local would not take it, or an empty delayed on a blind siding because no one knew it was there, or a man received two cars and another none when they had ordered the cars at the same time, it is not the fault of the yard clerk, or of the local train crew; nor of the agent or any other man who is usually blamed for such errors or mishandling of cars; it can be traced back to the man behind the gun, the car distributor.

A car distributor who is burdened with a lot of clerical duties which have nothing to do with the distribution of cars, is like a race horse trying to run a race with a load of coal hitched on behind. It can't be done.

Unshackle the car distributors. Give them a chance to distribute cars and watch moving trains and to take advantage of all means available to know of every car on their division and to keep informed of all the orders; then you will have 100 per cent service, and not before.

There are several ways of distributing cars, but the best way is by dividing the cars into seven classes, and then to follow up each class incessantly. The classes are: (A) Box cars; (B) coal cars; (C) stock cars; (D) flat cars; (E) furniture and automobile cars; (F) all foreign cars when not pooled with system; (G) miscellaneous cars. The tide of each class should be handled separately to avoid repetition when changing or canceling or modifying the tide on one class of cars.

The car distributors should be high class, well educated men with several years of practical experience.

A competent car distributor may handle 10,000 cars a day and distribute and fill orders for a thousand cars to load; but often the record is far below that, and as a rule, it will be found that he has numerous other duties to perform so that he is not able to do justice to the work. Each railroad has a different way of distributing and most of them have long cumbersome, old-fashioned reports calling for a lot of unnecessary information, entailing much unnecessary clerical work. With competent distribution will come less delay and less trouble for demurrage bureaus. By having one man responsible it will take a big load off the division and general officers and do away with the present custom of "passing the buck."

H. B. DREYER.

The Service of Supply

PORTSMOUTH, VA.

TO THE EDITOR:

The possibilities of enormous savings to be made by a properly organized supply department on railroads are thoroughly outlined in H. C. Pearce's article on "Functions of Departments of Purchases and Stores," published in your issue of September 15.

The simple statement that stock has been reduced eight and one-half millions of dollars may not astonish a railroad executive, but to a business man or to a banker to whom I showed this article, a saving of this kind is astonishing, and savings of this kind are what many of the railroads in the United States need most. Interest on eight and one-half million dollars is $500,000 a year. The reduction in stock means that this amount does not have to be handled, saving another half-million, as the handling charges on most roads are more than six per cent. The loss through deterioration, material becoming obsolete, etc., can only be approximated, but it can be safely stated that the C. & O., or any other railroad reducing stock eight and one-half million dollars will save one and one-half million dollars a year.

During the 20 years I was with railroads, from clerk to general storekeeper, pay-roll comparison, more than anything else, stunted and handicapped those railroads whose executives did not have the vision to know what a properly organized supply department could accomplish. Some roads never had a chance properly to organize for this reason. When reductions are made in stock, and the supply department is not properly organized and strengthened, storekeepers, as well as other officials, know serious delays are to be encountered, and storekeepers dread the criticism of being out of material and delaying the work. They know they cannot make an intelligent reduction of stock and still give service. If properly organized, with stock books properly kept, and given increased supervision, which is absolutely necessary with decreased stock, there is no reason for any complaint about shortage of material. Executives do not appear to realize that it takes money properly to operate their stores to secure economical reductions in stock.

A bank will take every precaution on a loan or investment, yet time and again I have known thousands of dollars to be invested in special materials on railroads without mature deliberation, and this material lay on hand for years and was eventually scrapped. There is need for strong and able men in your supply departments.

The principles in this article, and various other articles written by Mr. Pearce are not visionary, but entirely prac-

tical. There is nothing visionary about Mr. Pearce. He is deadly in earnest at all times. He talks and writes straight from the shoulder. Twenty years ago he went to the Southern Pacific, and these same ideas and principles were put in use. Anyone who has worked under or knows Mr. Pearce, knows that this meant that the smallest detail was carried out to the letter. That is the way he has things done. The things that some supply men consider theory are practical to Mr. Pearce's organization.

When railroads consider, as other corporations do, that every dollar invested in material that is not necessary is tied up capital, they will then have reached a common business understanding. Material is cash, but few railroads regard or control it as such.

D. D. CAIN,
Southern Brass Works, Inc.

Who Are the Employees' Leaders?

ITHACA, N. Y.

TO THE EDITOR:

I was in a prayer meeting once, and one of the striking things that I heard was the advice of an old saint to the younger ones to take care, in confessing their sins, to seek diligently to confess the right ones—the real sins. "We are very likely," said he, "to confess something which we class as needing confession, but which after all is not the great fault which God is requiring us to correct." I thought of this as I read your brilliant editorial of November 4 on dealing with the labor problem. You will perhaps say that this is not a fair criticism; for you do, in the last two columns of that article, confess (for the railroads) such grave sins that one can only wish that the editorial, in double leaded type and red border, could go to every railroad director in the land.

The thought that you had omitted to put your finger on the spot most needing attention came to mind in connection with the paragraph on letting the employees organize their "company unions" without being dictated to.

But what will the men do when not dictated to?

The crucial problem is the choice of leaders. Taking warning from innumerable past mistakes, one must feel impelled to warn every group of employees to select as leaders those of their comrades whom they have known for a long time, who have worked for the road a long time and who are well known generally for their integrity, fairness and conservatism.

In thus warning against giving preferment to the short-sighted, the inexperienced and the loud-mouthed, I may perhaps lay myself open to the accusation of squealing before I am hurt; but it is so easy to be fooled by men whose chief qualification is their gift of gab, and it is so difficult to get modest and solid men to do the work, sometimes unpleasant, connected with leadership, that I cannot believe my fears are wholly groundless.

Every division superintendent has a duty to keep as closely as possible in touch with his employees, of different classes, to see how they use their new-found freedom. He is, indeed, debarred from dictating to them; but he must, of course, have an intense interest in seeing that the best and most experienced of his men are at all times fully alive to their duty to guide the younger ones, and the newcomers, in every situation where there is a liability to go wrong. About 99 per cent of our labor difficulties are due to the carelessness with which the rank and file have selected the wrong men for leaders. Let every man do his own thinking!

The fully alert railroad president will, *of course,* see that no superintendent, or other officer negotiating with employees, ever allows the employees' spokesmen to outdo him in courtesy, fairness or patience. R. R. S.

Train Order Form 19

SAN FRANCISCO, Calif.

TO THE EDITOR:

I am much interested in the article in the *Railway Age* of September 23, page 553, on "Train Orders by Signal Indications," by A. R. Fugina, but I cannot quite agree with Mr. Fugina in his last two paragraphs, where he says that the "19" order for restricting the rights of trains represents one of the greatest advantages of an automatic signal system. The use of the "19" order for restricting trains does not represent "one of the greatest advantages of an automatic signal system." This form may be used with equal safety without such a system. On January 1, 1923, one of the largest railway systems in the United States will, under its new rules, permit the use of the 19 form for the restriction of trains on every mile of its track, outside as well as inside the automatic signal system. There will be a clearance check restriction, and a few minor restrictions; but these will not require the use of Form 31 for more than three per cent of the orders. The *unrestricted* use of the 19 order on single track is unsafe and dangerous.

The movement of trains by train order and time-table is entirely independent of the automatic signal system. All the automatic signal system ever did to extend the use of the 19 train order was to put some additional marrow in the backbone of some who did not understand the real difference between the two forms for restricting purposes.

I am a firm believer in the system of train operation by signals if there are adequate signals and provided some means can be arranged for eliminating the equality between a fast passenger train and a 75-car freight.

With the train-announcing scheme referred to by Mr. Fugina the operator and dispatcher must see the actual movement of the trains, or the result will soon be a blockade. Wireless communication between dispatchers and train crews would be of great value in preventing blockades.

How about permitting trains to do station work, or work extras to work under protection of a flag without holding an opposing extra or other train at the next station (absolute permissive system) or at the home signal intermediate between stations (positive system)? It sounds nice to say that trains will be equipped with portable telephones, but when it becomes necessary to have quick action in case of unexpected delays by a leaky engine or a slippery rail, and the trainmen have what they think is a reasonable excuse for not hooking up a portable set, I am afraid some of our non-operating friends are going to be disappointed.

The trouble with the train order system on some roads has been in overloading a first-class dispatcher with entirely too much territory and requiring him to do routine train sheet work for the benefit of the clerical force.

There is nothing wonderful in the operation of trains by signals alone on double track, as there are comparatively few train orders necessary and train dispatching is a joke.

WM. NICHOLS.

[The large railway system referred to by Mr. Nichols is, no doubt, the Southern Pacific. The rules defining the restrictions on the use of Form 19 which that company proposes to put into effect on January 1 are as follows:

The "19" train order must not be used in the following cases:

When a train order restricting the superiority of a train is issued for it at the point outside of block signal limits where such superiority is restricted, unless it be its initial station.

For a train order to be delivered to a train at a point not a train-order office, or at one at which the office is closed, the superiority of which is thereby restricted (See Rule 217); or for restricting orders sent direct to train and enginemen by telephone.

To restrict a train which has been cleared or the engine of which has passed the train-order signal (See Rule 219).

Where it is necessary for train dispatcher to know before authorizing its use by an inferior train, that the order has been delivered to the superior train.

When it is apparent that train orders are to be received without stopping, train-order offices must be passed at a moderate rate of speed.

Transportation Department at Syracuse

SYRACUSE, N. Y.

TO THE EDITOR:

Your editorial in the *Railway Age,* November 4, page 827, which commented upon the recent appointment of John S. Worley as professor of transportation in railway engineering in the University of Michigan and the establishment of a Transportation Department, has been noted and is commended.

For your information, in addition to the Chair of Transportation at Harvard University made possible by James J. Hill, there was also established in 1920 in the College of Business Administration, Syracuse University, a Chair of Transportation made possible by a gift from H. H. Franklin, the Syracuse automobile manufacturer. This chair is filled by Dean Charles Lee Raper, who has built up 11 courses dealing with the economics of transportation. The aim of this specialized work is to furnish men with the economic background necessary in order that they may later deal with transportation problems intelligently.

From your editorial we gained the impression that this school might have been overlooked.

WAYNE E. BUTTERBAUGH,
Associate Professor of Transportation.

Why Not Employee Relations Departments Too?

NEW YORK.

TO THE EDITOR:

The inauguration of special departments to assist the patrons of a railroad is concrete evidence of the railroads' efforts to render intelligent and effective first-aid to those in difficulties—perhaps in locating a lost shipment, or in obtaining settlement of a claim, or possibly in appeasing a passenger who feels that the attitude of a ticket-seller or trainman, or the service in the diner is not all that might be desired. Briefly, it is a centralization into one department of all complaints and dissatisfactions.

Now let us go behind the scenes, as it were, and consider the reason for establishing such bureaus. If the service rendered were all that could be desired, would it be necessary to maintain such organizations? May not public relations work on the railroads be boiled down to the axiom, "If our employees fail you, tell us about it." Going to the heart of the situation, and treating the cause rather than the effect it is first of all necessary to restore the loyalty which was once so conspicuous on practically every railroad. By this statement, we are not attempting to disparage in any sense the great majority of railroad men. On the other hand, it does not require a very long conversation with the average railroad worker of the strictly union class, and especially among the shop and track laborers, to receive the information that "the presidents and directors are a lyin', thievin' bunch of grafters," or "the railroads are rich, why shouldn't we take all we can grab." Again, "what do I care for the company, so long as I get all that's comin' to me," and "why should I work my head off when the big bosses spend their time in a private car ridin' to Chicago to cut my pay still lower?"

It is hard to counteract such a line of thought. Publicity through the daily press will accomplish little. In fact, every editorial and news-dispatch at all critical of the unions merely serves to further antagonize these men, and to deepen their belief that "the executives, through the bankers and newspapers are tryin' to bust the unions." Obviously, the trend of thought above depicted is encouraged, and in fact originated by the labor union periodicals, with their insidious editorials and vulgar cartoons portraying labor as the "martyrs" who wealth," or words which convey such an expression to their unthinking readers. It is sometimes amazing to understand how apparently self-reliant American men can "fall" for such stuff, and yet the fact remains that they have fallen, are falling, and will continue to fall for it unless the companies take some active steps to counteract the influences swaying them. Fortunately the sentiment indicated by the above quotations are probably not typical of the great majority of railroad employees. Yet, a few men with such feelings can do a lot of damage. It is easier to drag a man down than up, and the effect of such language on the auditors is not helpful, to say the least.

What are the railroads doing individually to correct these growing symptoms of disinterest in the company's welfare?

We know of one fairly important system where a truly remarkable example of loyalty is displayed by the shop foremen and higher officers of the motive-power department. the company's shops to be repaired by employees during working hours with company tools and equipment. An amusing incident in this connection occurred a short time ago. A bicycle was brought in by a certain officer, who instructed a mechanic to make a new part to replace a worn-out one. While the job was not a particularly difficult one, it would have consumed over two hours time, so the employee stepped up town, purchased the necessary part for 30 cents and returned to the shop. Placing it on the wheel, he returned the bicycle to the official later in the morning, saying nothing These men bring their motor-cars and children's bicycles to slave that the "capitalists may increase their ill-gotten about what he had done. It is not the purpose of this article, however, to analyze the reason for the man's action—whether he was too honorable to steal the necessary material, or too lazy to make the required part himself. If such instances occur at one point, it is not unreasonable to assume that similar happenings are practiced elsewhere.

We have pointed out, first, that the attitude of the employees in general is not all that it should and could be; and second, that the sense of duty may not be as strongly stressed by those in authority as it might be.

What means are available for correcting such conditions?

Some time ago, we mentioned in an article in the *Railway Age,* the desirability of a closer co-operation between management and employees, with committees which would gather periodically merely for a "get-together" to discuss affairs. The advantages would be far-reaching. A closer association between management and employees (and by employees, we do not mean national unions) would seem to be the first and most effective step, toward improving the esprit de corps.

But of all the opportunities afforded the railroads for improving morale, none is greater than the employees magazine. It is surprising that so few companies, comparatively, have thus far taken advantage of this admirable agent. The value of these periodicals is inestimable. There are many arguments in their favor, of which it may not be amiss to summarize the following.

(1) Improves morale. (2) Provides a point of contact between management and employees. (3) Instructs employees in the importance of their duties, and the relationship thereof to the work of other departments. (4) Offers an opportunity for the real men to express themselves and make known their ability (not necessarily as writers, but as thinkers). (5) Affords a clearing-house for worthy suggestions, by which the employee may benefit himself, as well as the company. (6) Allows the company a means of contradicting the misstatements in the union publications. (7) Makes possible a means for disseminating publicity favorable to the railroads, as such a magazine would be read by the newspaper editors along the line. (8) Pays its own way (by advertisements). (9) Saves money for the company and earns money, by encouraging from employees (a) pep, (b) ideas, (c) loyalty, (d) interest, (e) economy. (10) Keeps readers (officials and

men alike) in touch with what is being accomplished by the company.

Recently, another step has been taken by several roads, in an effort to keep in closer touch with their employees, in the creation of personnel managers, or any of the several titles which cover a similar range of duties.

To every official is offered the opportunity of doing his bit, however, in the way of increasing the initiative of those under his supervision. It is reasonable to assume that many employees could, if properly encouraged, offer some broad, constructive suggestions in the interests of the company. The story goes that an employee of a certain system offered several thoughts toward improving the road's service, and increasing revenues in some obviously possible ways, but was met by a rebuke from the vice-president, that such suggestions were only acceptable when advanced by officials of the road, and that this was the first time in the recollection of the officer in question that any employee had ever taken such a liberty upon himself. There is no doubt but that many employees have originality, plus ambition, and that only the proper encouragement is necessary to apply this to the company's advantage. The B. R. & P. has shown its progressiveness by offering cash prizes for the best suggestions.

FRANKLIN SNOW.

Echoes of the Recent Strike

CHICAGO.

TO THE EDITOR:

As the echoes from the recent strike of the shopmen and allied crafts are reverberating, I am wondering if any good will result from the struggle or if the losses to both sides will be in vain. Is it possible to make an entry on the profit side of the ledger.

In dollars and cents, there cannot be. Even by working overtime and on holidays at time-and-one-half, the men cannot regain the stupendous losses in wages as a result of their self-imposed idleness. Neither can the railroads recoup their losses sustained through idle equipment, destruction of property and the inefficiency of a great majority of those who took the places of the strikers. Nor can the public, the innocent third party, regain the drainage on its resources through the inability of the railroads to transport the commerce of the nation promptly from the producer to the consumer, thus resulting in the loss of millions to the producer for products unsold and to the consumer in higher prices for the products consumed. Consequently there seems to be no immediate or concurrent good resulting from the strike.

Without thought or reasoning man is very little above the level of the brute. The swine feasts upon the acorns beneath the oak tree but never looks up to see whence they came or whether there be any more to fall. The stampeded herd follows its leader over the precipice to destruction on the rocks below. The man who does not think for himself is contented as long as the physical nature is satisfied but is as easily stampeded and led to his destruction as the beasts of the field.

I was a striker once myself and have been the third party in other strikes, and it is my opinion, based on actual experience as well as observation, that only a small minority of those involved in any strike really and truly desire one or have a real plausible excuse, from a personal standpoint, to go on strike. Then why does the vote usually show an overwhelming majority for a strike? Simply for the reason the men do not think for themselves or weigh the cost but follow the universal feeling or impulse that to vote negatively is an evidence of weakness and cowardice and liable to subject them to ridicule by their fellow men. The emotions of the herd become predominant over the reasoning faculties of the individual and the stampede is on.

Labor has always maintained that its right to strike against unfair wages and unjust working conditions is inalienable. But let us analyze the meaning of the phrase and see if this is true. As strikes have been conducted in the past, they mean more than the peaceable cessation of work when wages and working conditions are unsatisfactory. No one will deny the worker the right to quit work, in a peaceable manner, when he feels that he is not obtaining the pay that he considers his labor worth or that his environment is not as pleasant as he would desire; but when he enters into an agreement, or legally speaking, a conspiracy, with other co-laborers that all will cease work at a given moment, he is then beginning to infringe upon the rights of others and thus puts himself in opposition to the principles of our government. If the concerted movement would stop with the cessation of work he might still be within his rights to a certain extent, but they do not stop there. The striker, in leaving his work, does not renounce his claim to the position he leaves, but, calling it his own job, uses every means in his possession, even resorting to violence in many cases, to prevent another from doing the work he said by his actions in quitting that he would not do. Thus the rights of the public to an uninterrupted production or distribution and the right of a man to work where he wills are infringed upon and there is where the government steps in and calls a halt.

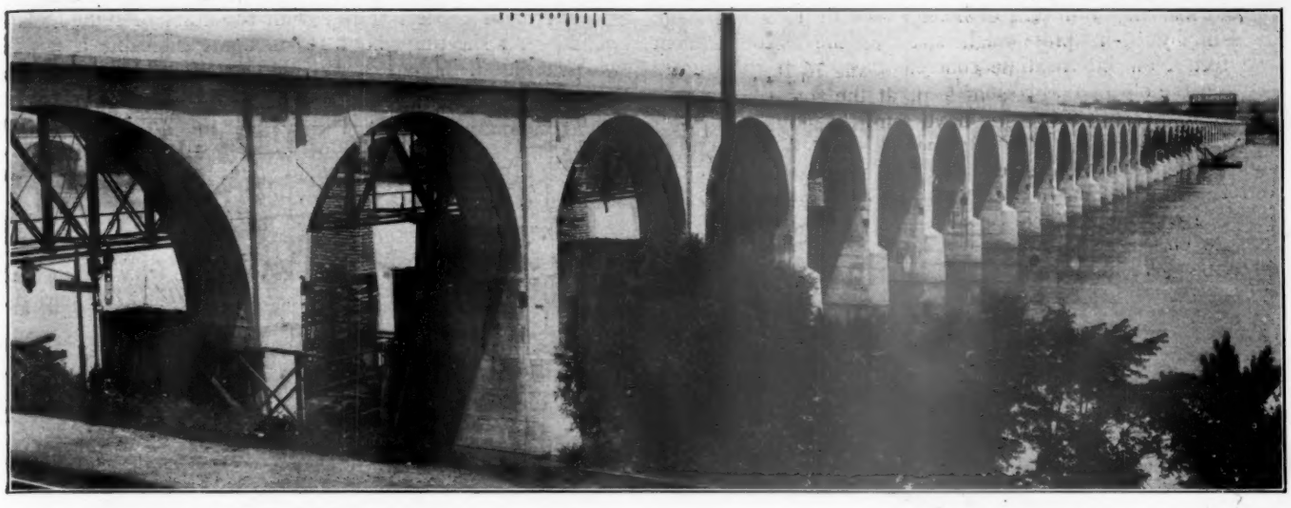
This to my mind is the reason for the failure of almost every strike of any magnitude. Our government would cease to exist did it not protect the rights of one against the encroachments of another.

Ask those who have gone through a strike, remaining idle for weeks and sometimes for months, their savings, accumulated by thrift and self denial, exhausted, if strikes pay, if they would be willing to go through another for the same cause, and quicker than they voted "yes" before they will say "no." Circumstances have caused them to do some thinking for themselves and they will think more for themselves in the future than they have allowed others to think for them before.

Railroad labor had been led to believe, through agitation and propaganda from those in authority in each craft and through repeated failures of local strikes, that more could be accomplished through a nation-wide strike, but it is fortunate for the country and labor itself that the shopmen's strike did not include all classes of railroad labor. It is true that our transportation system would have been paralyzed temporarily, but the ultimate result would have been the same, the triumph of our government. The end of the shopmen's strike was not the triumph of the railroads but of the government, and while the losses have been shared alike by the strikers, the railroads and the public all have gained in the awaking of a new consciousness and we find labor coming to its senses and the shadow of an impending national paralysis of our transportation system that has been hovering over the country since 1916 is being dissipated by the return of reason to her throne and the banishment of radicalism from the assembly hall. No stronger indication of this state of mind can be found than in the action of President Lee of the trainmen in declaring that henceforth his organization would stand aloof from all entangling alliances with other organizations and fight its own fight alone.

If then, the strike has taught men to think for themselves and to appreciate the fact that our government exists of, by and for the people, that each has rights upon which the other cannot encroach and that reason, aided by the golden rule, is the best arbiter of all differences, the losses sustained through the strike will be as "bread cast upon the waters."

AN EX-RAILROAD EMPLOYEE.



A General View of the Structure from the South Side

Philadelphia & Reading Builds 46-Arch Bridge

Steel Centers Shifted by Floating Adjustable Traveller at Susquehanna River Crossing at Harrisburg, Pa.

By Charles H. Hitchcock
Assistant Engineer, Philadelphia & Reading, Harrisburg, Pa.

THE PHILADELPHIA & READING'S new arch bridge over the Susquehanna river at Harrisburg, Pa., has reached its second and final stage of construction, traffic having been transferred to the completed southern half on July 11 of this year. The bridge is located on the Philadelphia, Harrisburg and Pittsburgh branch of the Philadelphia & Reading connecting the Lebanon Valley branch at Harrisburg with the Western Maryland at Shippensburg, Pa. An article on the traffic conditions necessitating this change and also descriptive of the design, etc., appeared on page 869 of the November 19, 1920, issue of the *Railway Age*.

The new bridge replaces the original single track 23-span wrought-iron, deck truss bridge built in 1890-1891 by Coffrod & Saylor, its total weight being 5,551,000 lb. The pier masonry of double track was built by Nolan Brothers, Reading, Pa. The original truss spans were 149 ft. 4 in. center to center of end pins, 24 ft. 9 in. center to center of upper and lower chords, and 9 ft. 9 in. center to center, provision having been made for a third truss for double tracking although this was never constructed.

New Structure Has 46 Arches

Bridge No. 8, as the river bridge is designated, will be a double-track, reinforced concrete structure, 3,507 ft. 9 in. long and consists of 46 semi-circular arches with a clear span of 66 ft., and a width between railing panels of 31 ft. 6 in. The bridge, which is constructed on the existing alinement and grade, is 54.65 ft. above water level at the eastern pier and 79.15 ft. at the western pier with a gradient of 0.7 ft. per 100 ft. The old piers were encased in concrete and were 152 ft. 6 in. center to center, the encasement being not less than 18 in., giving a thickness at the springing line of 11 ft. 6 in. These old piers were built in range work from foundation to coping of Clearfield County sand stone laid with cement.

Method of Supporting Upper Chord of Old Trusses to Allow Placing of Centers

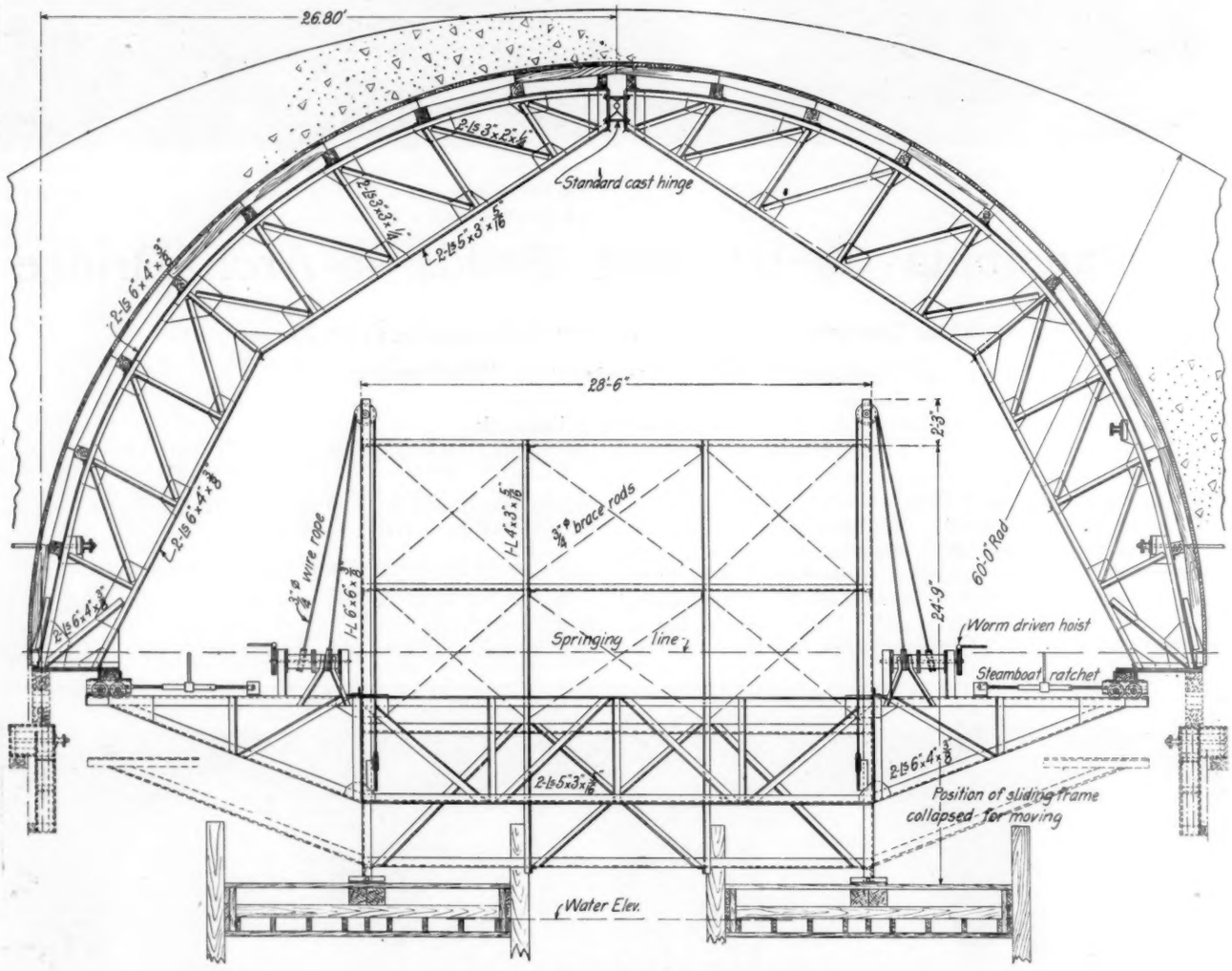
The encasement is thoroughly reinforced and anchored to

the old masonry by means of bolts 3 ft. 6 in. long with 4-in. by 4-in. by ¼-in. plate washers, set in the masonry about two feet. New intermediate concrete piers were constructed between the old piers, making the spans 76 ft. 9 in. center to center, with a thickness of 9 ft. at the springing line. All of the piers in the river have semi-circular noses on both ends with a batter of ½ in. per ft. on the downstream end and 1 in. on the upstream end. The sides have batters of from ½ in. to 1 in. per ft. and were constructed with six recesses on each face to carry supporting brackets for the centering. All the piers were completed for the full length with the exception of Nos. 21 and 23, the northern half of which are now under construction upwards from a point about six feet above water level.

Cofferdams of steel frames with two lines of light Lackawanna steel sheeting about 18 in. apart enclosing a puddle wall were used in constructing the foundations, the depth of water varying from 2 ft. to 8 ft. 6 in. These dams were found to be satisfactory except when fissures in the rock were encountered within the dams making unwatering difficult and requiring considerable more puddle with a layer over the surface outside the dams.

Unique System of Centering is Devised

In order to eliminate falsework, the use of which would have been necessary in the 46 spans at two separate periods,



A Cross Section of the Arch Rib Traveler

Old Trusses Continued in Service During Construction

The springing line of the new arches is 40 ft. below the base of rail and 12 ft. below the tops of the old piers, enabling the contractor to build for the full length and height without interference from the old trusses. Above the springing line the work was divided into two sections, the southern half being constructed with traffic on the old trusses.

The majority of the old piers were built upon bed rock, in some cases upon gravel overlying the rock. All of the new piers with the encasement of the old were built upon rock with the exception of about ten piers located about midway of the structure.

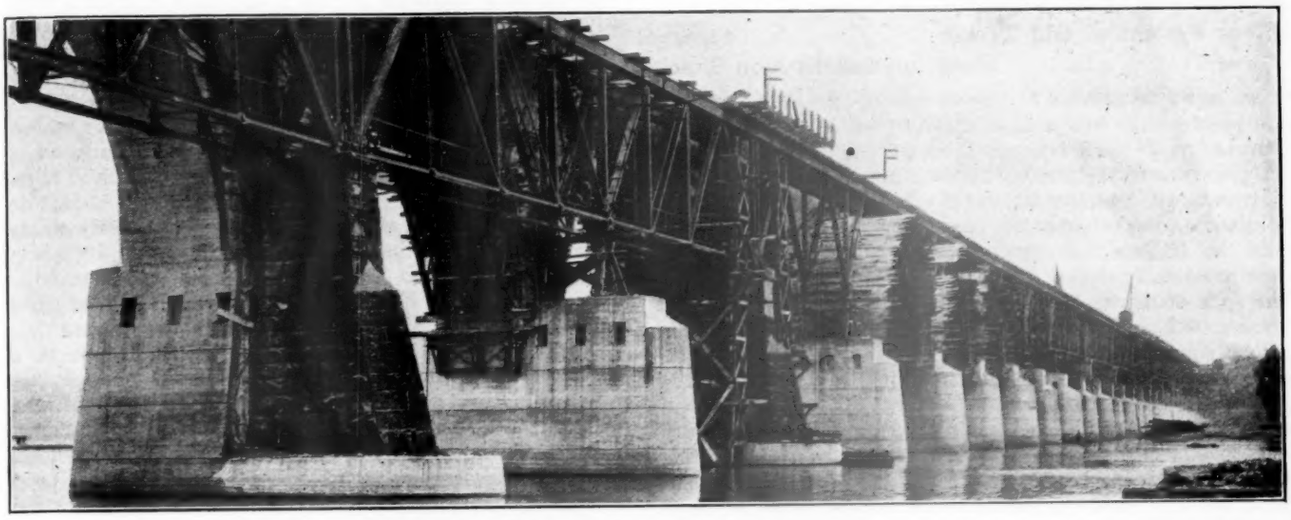
with all but two spans over water, 10 sets of steel centers made by the Blaw-Knox Company were provided for the arch ring construction. These consisted of three steel arch ribs hinged at the crown and resting on steel brackets set in recesses in the piers, of which there were three in each half of each pier. These centers with the lagging intact were moved from span to span by means of a pontoon traveller constructed and furnished by the same company. The traveller was built of steel and rested on a pontoon of three decked scows built by the masonry contractor. The scows were about 16 ft. wide, 60 ft. long and shallow on account of the depth of water.

Since there were 44 arches over water in the construction of which it was intended to use 10 centers necessitating about 88 moves, the bridge being constructed in two sec-

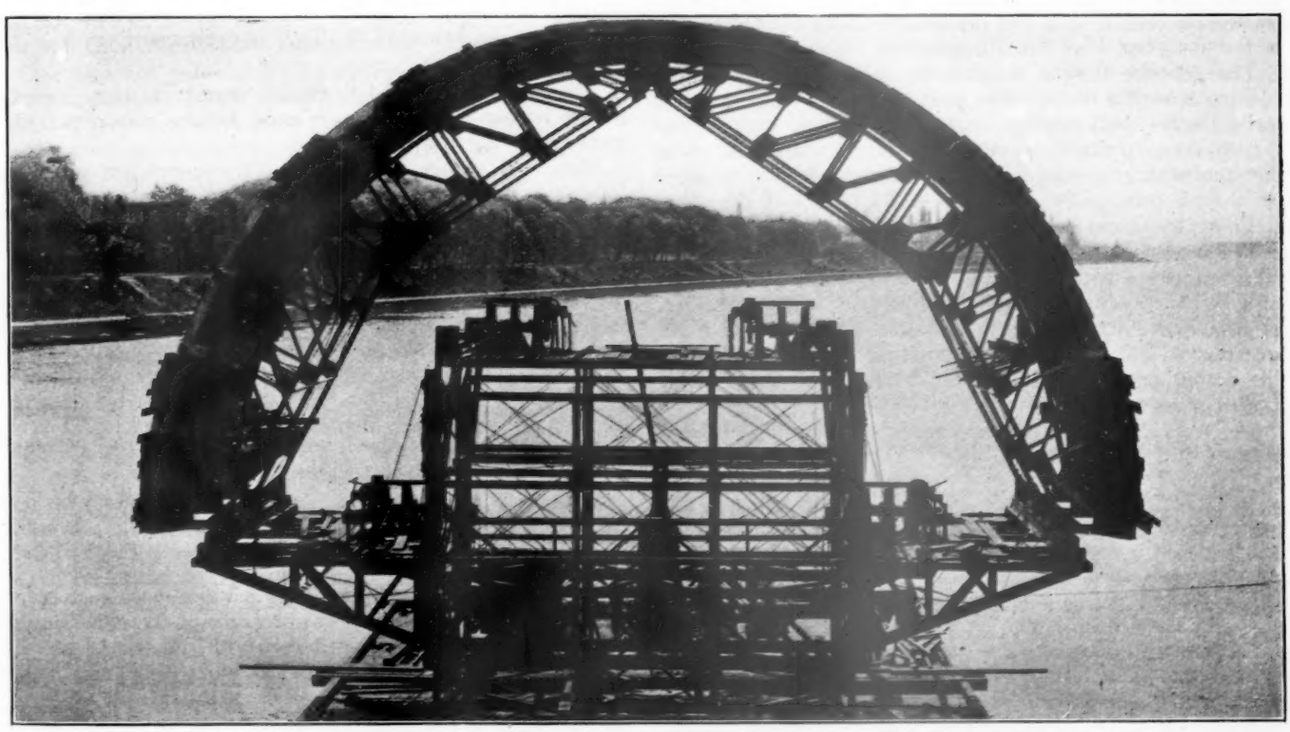
tions, it was necessary to devise some method whereby the centers could be raised or lowered on the pontoon to overcome the difference in elevation between arches. The maximum difference in elevation between extremes was about 24 ft. This was accomplished by constructing the traveller so that one section of the steel framework could be raised or lowered on a fixed section made a part of the pontoon, while to cover the maximum difference in elevation, additions were made to the fixed section as required. The movement of this sliding or movable section was controlled by a series of hand power, worm-driven, drum hoists. The center itself rested upon two hand-controlled "roller" type bearings which are moved in or out from the center line of the framework upon a steel section made a part of the upper or sliding section and cantilevered out beyond it on two opposite sides as shown in the illustrations. The clearance of the framework, and thus the center when in position for raising or lowering is about three feet, at the spring line. This arrangement for handling the centers was entirely satisfactory and was found to be a material factor in the saving of time and expense.

The concrete was moved from mixing plants situated on either side of the river by means of a 24-in. gage track built upon 6-in. by 10-in. timbers spaced between the ties and extending sufficiently to give a side clearance of 9 ft. 6 in. from center to center of tracks on the north side of the bridge with passing sidings at both terminals. The train consisted of side dump cars with a 3-ton gasoline engine. Construction was started at both ends of the bridge, spans 20 to 30 being the final location of the centers for the first half section.

The contract for the removal of the old truss spans was



Showing a Number of Stages of the Construction



Adjustable Traveler Used to Place the Steel Centers with Lagging in Place

awarded to the contractor constructing the new bridge. At the time of this writing considerable work has been accomplished in connection with the dismantling, together with the resumption of work on the north half of the new structure. After traffic was transferred to the finished southern half of the new bridge, the old structure was vacated and turned over to the contractor for dismantling.

Floor System of Old Trusses Used for Construction Track

In order to provide means of moving the concrete from the plant on the west side of the river to the location of the centers left in place between Piers 20 to 30, it was decided to make use of the floor of the existing trusses to carry the narrow gage construction track. Trestle bents were constructed on the intermediate piers supporting the center post and the diagonal members on either side of the pier were reinforced with timber compression members. In this way the span of the top chord was reduced sufficiently to permit the removal of the balance of the truss, and resulted in sufficient clearance to permit the shifting of the steel centers to their position under the north half of the new work. When the centers were placed in position and to the proper elevation for the arch ring concrete, the end posts and temporary diagonal members were replaced by batter bents supporting the top chord on the centers. This provided an open and clear space for pouring the umbrella section, when supports were again rearranged, making use of the concrete in the umbrella, after which the other sections of the arch ring were completed.

The pouring of the arch ring will be followed in order by the spandrel walls, waterproofing, protection coat and dry stone packing, until all arches from No. 20 westward are completed. The removal of the upper chord and deck of the old truss will follow in order, after which work will be started on dismantling the old bridge and the construction of the new from Pier No. 20 eastward.

The concrete in the structure is a 1-2-4 mixture with 1½-in. stone for foundations, neat work, arch ring, spandrel walls, center wall copings and railing posts, with ⅜-in. graded stone for railing panels, with some imbedded stone in piers to springing line. The sand being used is crushed silica rock principally from Mt. Holly, Pa., and the stone is lime stone rock from nearby quarries.

The waterproofing is two layers of asphalt saturated fabric protected with a 2½-in. course of concrete reinforced with electrically welded wire cloth 4-in. by 4-in. mesh, No. 12 gage, and fibrous cement in all joints. All overhead wires are removed and placed in a 4 multiple terra cotta duct in the coping on both sides of the bridge with hand holes located at every third pier.

The following are the approximate quantities in the finished bridge:

Excavation	7,000 cu. yd.
Concrete	45,500 cu. yd.
Piles	35,600 lin. ft.
Reinforcement	1,300,000 lb.
Waterproofing	153,000 sq. ft.
Wire cloth	130,000 sq. ft.
Terra cotta conduit	7,000 lin. ft.

The structure was designed by and is now being constructed under the direction of the engineering department of the Philadelphia & Reading, Samuel T. Wagner, chief engineer, Clark Dillenbeck, assistant chief engineer and P. S. Baker, engineer of bridges and buildings. The field work is in charge of the writer until recently associated with Edwin Chamberlain, assistant engineer, now deceased. The contractors on the work are the James McGraw Company, Philadelphia, Pa., T. L. Eyre, Philadelphia, to whom the foundation excavation was sublet and the Minwax Company, New York, for the water-proofing.

New Haven Valuation Report Issued

WASHINGTON, D. C.

THE INTERSTATE COMMERCE COMMISSION on November 28 made public its tentative valuation report in which the common carrier property used by the New York, New Haven & Hartford and its leased lines is given a "final value" of $382,797,066, or at the rate of $194,000 per mile of line, as of June 30, 1915. The property which is given this valuation covers 1,966 miles of main line (4,405 miles of all tracks), including 751 miles of main track, or 1,800 miles of all tracks, of lines leased by the New Haven, valued at $121,927,724, and 35 miles of main line (90 miles of all tracks) owned by the New Haven but leased to the Central New England and the Boston & Maine, valued at $3,251,800. The final value of the common carrier property wholly owned and used by the New Haven is given as $260,869,342, or $208,000 per mile of line. The total outstanding capitalization of the New Haven was $373,861,350, of which $157,117,900 was stock and $216,743,450 was funded debt. This capitalization covers the New Haven's investment in its leased lines, but not their entire capitalization. It also covers $227,399,330 of investments in the securities of other companies having a book value of $227,399,330, the actual value of which, the commission's report says, is not known. It also covers investments in miscellaneous physical property not included in the commission's valuation, but stated on the books of the carrier as $5,357,414 and 5,851 acres of non-carrier lands of which with the structures, the commission gives the "present value" as $13,466,313. The company's investment in road and equipment as stated on its books was $195,505,843, which the commission readjusts to $193,417,165. The cost of reproduction new of the common carrier property owned is reported as $244,901,542 and of the property used as $338,836,084, while the cost of reproduction less depreciation is given as $187,528,798 for the property owned by the company and $263,759,083 for the property used.

The original cost to date of the common carrier property cannot be obtained, the report says, for the reason that the records are not obtainable.

The final values of the leased properties are given as follows:

Old Colony	$49,002,100
Boston & Providence (Mass.)	16,250,000
Boston & Providence (R. I.)	5,000,000
Providence, Warren & Bristol	2,000,000
Harlem River & Portchester	30,245,500
Holyoke & Westfield	1,750,000
Providence & Worcester	10,350,000
Chatham	150,000
Norwich & Worcester	6,250,000
City of New York	620,000
Ireland Real Estate Co.	286,000
Private Parties	18,887
West End	5,237

The book value of the investments in securities of other companies is classified as follows:

Boston & Maine	$29,017,616
Railroads	86,027,209
Trolley Lines, Water Transportation and public utilities	98,220,766
Other investments	14,133,737

In an appendix the report gives a voluminous history of the development of the physical property of the New Haven system and of its complicated corporate financing, as well as an analysis of its investments in other companies.

APPLES EXPORTED from Halifax, Nova Scotia, up to the end of September amounted to a total of 134,839 barrels, all going to the markets of the United Kingdom. This is double the shipments for the same period a year ago. This year the early apple crops in both the United States and western Canada were good, so that the Nova Scotian exporters only had the English market to supply.

Do American Railways Lack the Selling Sense?

Great Possibilities Lie Dormant Which Would Make for Greater Business and Good Will

By a Former Railroad Man

I REMEMBER reading, when I was a small boy, about a surly passenger on a Pennsylvania train, who when the conductor asked him for his ticket, threw the pasteboard on the floor. The story made a great impression on my mind. For the suave and self-possessed conductor said not a word, but stooped, picked up the ticket, punched it and laid it back on the floor.

I was a schoolboy then, and I rode on the Pennsylvania every day. We schoolboys were pretty noisy on the train. But there was one particular train on which we were careful to behave pretty well. The conductor was a stately and white-haired man who stood very straight in his irreproachable uniform, and who wore gold eyeglasses. I used to wonder if he was the one in the story who had met rowdyism with the retort courteous. It was a pleasant feeling to travel with a man of that kind. Some of the conductors used to have more or less trouble with the boys. But the stately old gentleman never did. He carried what we would today call an atmosphere.

There has been a great deal of that kind of influence exerted in America by railroad men. Some of them have been railroad presidents, and some of them of much humbler rank. Some have dominated their communities, and could carry their ward—and others have made more enemies than you could dream of.

Spreading a Trail of Discontent

One day this summer I was riding up in the anthracite regions, where there are many branch lines and changes of cars. The coach in which I traveled was crowded with travelers to the summer resorts. They were just plain folks —not the kind that ride in parlor cars and feel sure of themselves—and they were anxious, disturbed, confused by a transfer we had just made. The conductor was working his way down the aisle. He hadn't gone far until he was scolding an old couple and telling them they were on the wrong train. He grabbed at passengers' tickets as if he suspected the holders of having stolen them. He gave instructions and answered questions in a tone that could not be more than half understood. He spread a broad trail of unrest and discontent.

As I watched him, I told myself that the whole trouble with the railroads is that they lack selling sense—that they've forgotten the cordial courtesy of former days. I told myself that you can buy tickets from them if you insist, but that they're the only people in this whole United States who had no idea of how to *sell*.

There's much talk about railroad ailments, and whether it be right or wrong, a mountain of ill feeling and complaints. These range all the way from the average politician's patter to the grouch a passenger gets in the dining car. And most of them are groundless. We all know American railroads are managed extremely well. Under great difficulties they have functioned and are still functioning steadily as the arteries of our national life. I am inclined to think that their one big failure is the one I've just been telling about.

Is This Typical?

To be sure, the conductor wasn't supposed to be a salesman, and you buy your tickets before you get on the train. But isn't that begging the question? Customers must come back again. I wonder sometimes what the railroads would do if we all quit coming back?

I live in a prosperous suburb of a big town. A weary little woman walked up to the ticket window the other day while I was there.

"What will a ticket to Denver cost?" she asked.

"Denver, Colorado?" replied the clerk, as if correcting her.

She was a timid little thing. "Why, I s'pose so," she began. And then the words began to fall over one another as she told her tale. "My sister's sick," she said breathlessly, "and they sent me a telegram, an' I run right over here quick, an'—"

He turned to a tariff with an air of boredom, jotted down a figure or two, turned halfway back to his desk, called over his shoulder "Fifty-one dollars and eighty cents," and sat down again to the work he had in hand.

She stood reluctant. She wondered whether he meant one way or round trip—how long it would take her to get there and when the train would start. She wondered if she dared to inquire. But the atmosphere was too forbidding—the little woman turned slowly away.

The Banker as a Salesman

The other morning my wife and I were walking up the street when we met the president of our new suburban bank. He was all attention and smiles.

"I certainly do wish you'd come down to the bank and call on us now and then," he said to my wife. "Come in when you're down our way. I counted 63 ladies in our bank the other morning between nine-thirty and twelve—we're getting to be almost as much a social center as the Cash-and-Carry store."

And we all laughed, for the line of limousines that draws up every morning at the Cash-and-Carry store is a rather notable array.

So the banker was trying to sell his banking facilities to my wife. He wanted to see if he could be as successful at it as the grocery man. And he has opened 500 new checking accounts in 60 days.

I wonder why the railroads don't quit scolding, and solicit business that way? For the banker didn't go at it at all like a railroad man—he didn't tell my wife about his capital stock; he didn't grumble about the small dividends banks are able to earn; he didn't once mention the unfairness of the banking laws, or the trouble he is having with labor, or how heavy his taxes are—he just tried to sell her the fact that they were human folks and would be glad to have her stop in. And his banking rooms are cozy. For the ladies there are desks and easy chairs. There is an air of cordial hospitality, and everything is quiet and clean.

Experience in a City Ticket Office

I went into one of the big city ticket offices not long ago. The place was jammed. Customers stood at the long counter two and three deep. I wondered how long I would have to wait. Ticket clerks were hurrying up and down, jostling one another, spending long periods at the telephone, asking one another where to find this or that—a handsome picture of how it should not be done. There was no quiet, no desks, no easy chairs for the customer who had the

temerity to sit. And yet I am told that it is one of the best appointed ticket offices in the world. They employ 16 high-class ticket clerks during the summer rush—men who know routes and rates and are technically equipped to issue you a ticket round the world. The demands upon them are intricate. *But I understand that not one of them ever has heard a talk or read a book on salesmanship.*

I asked one of the road's officials why it was. Here was a great opportunity to sell transportation. But nobody thought of selling anything. I told him that no merchant would dare treat cash customers as they were treating them. He looked at me pityingly. I told him that he was looking for trade, just like the rest of us—or at least he should be.

"And competition," I said.

That was something he could understand. "I don't think we have much," he said complacently.

I led him up a broad and boulevarded street. We went into an automobile place. A brass-buttoned servitor opened the door for us. A courteous attendant asked whom we would like to see. A great leather-covered divan invited us to sit and loaf. We sat idly lookingly at a car that was fit for a king.

"Here is your real competition," I said to the railroad man. "Here's where they're taking money away from you. Down at the big department stores they are taking still more. The shoe man, the jeweler, clothing man—all of them are busy selling goods.

"You railroad men are a decade behind the times. You should think as these merchants think, in terms of customers and sales. If they found themselves confronted with your case—the getting of all these vacation people out of town—they would know what ought to be done. I think I can see their full-page announcements, and their care to stimulate more trade, and I can see the crowds hurrying in their doors. And comfort and promptness and courtesy. People would begin to talk about what a fine thing travel is.

"Shall I open a department store?" he asked. "Job lots of tickets? With signs on the counter, 'Odds and Ends $1.98' and 'Damaged by Fire, Closing Out at Half-Price'?"

I smiled. "I'd just mix in a little selling sense," I said.

I spoke to him about the ticket clerk who had laid down his pipe to tell the old lady what the rate to Denver was. I said I thought that such things were pretty rank.

"You're picking out an exceptional case," he said. "Some of these out-of-the-way stations where we can't always be on the watch."

I smiled at him in a superior way.

"Let me tell you, old man," said I, "that was nothing less than on your own great and most splendidly run road. And it was not at an out-of-the-way station. At least one of your directors uses it regularly to commute. Pretty bad, let me say, when it's done under the official nose."

No Trained Salesmen

And I find it about the same everywhere I go. In the first place, there are no trained selling men. And if there were, there is no proper or adequate physical plant in most stations for selling tickets. There is a dingy and dusty room in which stands a ticket case. It is a crowded little room, and nine times out of ten the light is poor. The agent won't smile at you. And he won't be very polite. He will be crusty if you give him half a chance. And he will not volunteer to do, say, or help in any way if you are in a predicament. As to establishing a relationship with you for his road, or asking if you are going to want any transportation to Florida this winter, or inquiring if he can be of any help when your two girls get ready to start back to school—as to *selling* transportation—it simply isn't being done.

I hear the railroad men jump up to state exceptions. Well, there are exceptions. But they are in spite of the system and dependent on the man. But the dingy surroundings in which he is expected to work out his sales are always the same.

Think them over as your eye glances over the country. The dingy, grimy station at—What town shall we say? They are much alike. The little old wickieup station, and the little window before which you plead. It may be in the northern hills. It may be at a southern winter resort. It may be on the western plains. In Ohio, Michigan, Iowa, you meet the railways through their untrained men.

It is hard to get the right man! We all know that. We have the same difficulty in every business, no matter what it is. I remember it was in that selfsame state of Iowa that the noble-minded agent burned down the station in which he lived so that he could get the insurance on his household goods, to repay his company shortage and die an honest man. They're hard to handle, I'll agree. But can they be handled? And is any organized and adequate means to train the railways' salesmen in salesmanship being pursued? And if not, is it agreed that we are not going to sell transportation at all?

The average merchant or manufacturer succeeds only because he sells. He sells so well that he can say, usually, that his turnover is three or more times his investment per year. If he has a million-dollar plant or stock of goods, he must sell a million dollars' worth of his product every four months. I am not laying down an invariable law; but I am stating an average case.

Are the Railroads Different?

But there is not a single railroad in the United States that makes even one turnover a year. And when you talk about it to railroad men they look at you in surprise. And when you tell them about it, they say that the railroads are different. In what are they different? In that they have put selling effort behind them? The executives of a railroad, like those of a manufacturing plant, divide sharply into production and sales. The railroad man will tell you that he uses no such terms. That is true. But he has operation and traffic, which amount to the same thing.

When the government took over the railroads, the traffic man almost fell dead. His operating colleague had been waiting for that for many years. And now it looked as if his time had come—as if, like the man in the book, he would, officially speaking, die and go to his place.

It was accepted, in other words, as a fundamental fact, that the railways of this country were to be operated solely as a means to carry the maximum of goods that had to be moved. There was no question of creating traffic. There was too much of it at best. The roads no longer solicited trade. The freight solicitor who had run up and down the land taking tonnage from his competitor, but never creating an additional ton of it, was to be made extinct. The passenger solicitor, who wasn't much more useful than he, was to be called in. Most of them have now passed into the great unknown. The officials in charge found that it was a most tempting opportunity to clean house.

But are their successors a different breed? The old men dropped out for the reason that they had never been trained to *sell*. They were former clerks or rate men, grown up by seniority from the lowest ranks. Their capacity was small. They belonged to that era when there was a general passenger agent, who went about the country tacking up posters and cards; and a general ticket agent, who spent his time in trying to see that the road he represented got the big end of the split-up when the revenue came in. It was largely an atmosphere of rates and pro-rates, differentials, arbitraries and rebates, and no fit place for an executive to learn his trade.

That and one or two other considerations explain largely why the railroads today are where they are. It is a de-

batable question whether a man brought up from boyhood, perhaps, in this kind of an atmosphere, can rise to the question of how to teach the spirit of salesmanship, or inspire a body of men with the genius of how to secure the good will of large numbers of our body politic. It is pretty hard to do.

Some years ago Edward Hungerford wrote in the *Saturday Evening Post* that "The primary schools of railroading are the little red and yellow and gray station buildings that one finds up and down the steel highways of the nation, dotting big lines and small." But I venture to say that if you were going to pick out your future big transportation men the average group of station agents wouldn't interest you very much. For this school is a poor one, crowded with unprofitable tasks—shipments of live stock, telegrams, train orders, the collection of freight bills and mending the station stove. The station agent is faithful and hard-worked. But he is far from being an active selling force.

And let me quote further from Mr. Hungerford. "You find at least one of them in each town in America that thinks itself worthy to be called a town. To the railroad their importance can hardly be minimized. They are its tentacles, the high spots and the low, where it touches its territory and its patrons." Therein, I am sure you will agree with him most heartily. They are, as you might say, the dealers who handle the railroad's goods. But the goods are not always well sold. And I am arguing that these dealers should be shown how to sell.

Some years ago, Marvin Hughitt, who had been a station agent's helper himself, once upon a time, said to a recently elected governor of a western state, "Governor, I think I should be entitled to citizenship in your commonwealth."

The governor hadn't been governor very long, and I think he was flattered as the veteran railroader talked with him.

"How's that?" he inquired. "I am sure we would all of us welcome you." Which of course they would not, for they were gunning, politically, for all railroad people in those days.

Mr. Hughitt drew himself up a little and looked the governor in the eye. "I have slept," he said, "on the bare ground and under the open skies in every county of the state of which you are now the head. Don't you think that should entitle me to citizenship?"

I think the governor saw the point. He was by way of being something of a pioneer himself. And a pioneer is pretty nearly a patriot. The state need fear no harm from the man who has slept on the ground and under the stars, helping to bring civilization into the wilderness. Many of our railroad men are of the Hughitt type. They have helped to make our cities and our farming communities what they are today. They feel a pride in having been a part of it all. They don't propose that any harm shall fall upon the country they have helped to form. That isn't highbrow, and it isn't altruism—it is just plain human nature, working its own will.

The railroads are in the hands of such men as these today. And it is possible that the roads are just emerging, if I mistake not, from that period of strong personal control. A new type of man will follow where Hughitt and Hill and Ripley once led. The public sees no one of commanding figure to step in when Elliott and Rea, Willard and Atterbury step down. Perhaps, before they go, now would be a good time in which to begin a new line of policy. Perhaps now, when the railroad heads no longer sleep with their engineers on the open ground, it is time for the railroads to turn to the question of salesmanship, so that they may once more come into their own.

How About Advertising?

Our civilization is getting pretty complex. We as a people are no longer pioneers. We are no longer poor. We spend money freely. The railroads cannot be prosperous so long as they do not get their share. And they are not getting it. It becomes a grave question, then, to traffic men, whether they're using all the methods of modern selling power that are available. Many are quite ready to admit that they are not. Selling power, as an example, includes salesmanship-in-print. The railroads are not keeping pace with the manufacturers in the use of this necessary and effective merchandising weapon. Advertisers, in 1921, spent $95,439,236 in nationally circulated periodicals. This included seven of the larger farm papers. But the railroads used only $169,926, and over one-fourth of that was from the three Canadian lines. In newspapers, from the nature of the case, the roads spent more. But much of it was spent with one eye upon the editorial attitude, which is a mistaken point of view.

I doubt if many railroad men have posted themselves fully about the problems and the richly generous results that come from the correct use of the printed page. It presents to the business man a mighty forum wherein to preach profitably the merits of his wares. But in it the voice of the railroad man is seldom heard.

It has become, the railroad people agree, a recognized fact that the day when the merchant could stand in his shop door and solicit trade is past. They agree that the town crier is a municipal institution now wholly of the past. But they haven't learned that the seller must communicate with the buyer in larger ways.

So, if you will examine the difficult case of the railroads, you will find, largely, I believe, because of this, the old question of turnover is constantly bobbing up. It is sure to appear in any business where selling forces are not properly applied. It is, in a way, the old question of grass blades. Is there no practical answer to the belief that two grass blades can be fostered where only one once grew? The whole history of the railroads refutes such a claim. Of course they can be made to grow. But should the railroads continue to wait until some one shows them how?

Short on Good Will

One of the great returns from advertising is good will. The railroads are certainly short on that commodity. And yet there need be no dearth of it. Business men know all about how to secure it, and they use the way to its doors over and over again. The name of it is selling. And in order that selling may be *en masse*, and that big results may be secured in a minimum of time, it takes money, and science, and experience, and brains.

My friend Mr. M. has a plant that is capable of producing a million tons a year. He could put on a night shift and make it two million if only—But his men tell him the public is using all of it that they know how to use. Here not good will, but increased earnings are at stake. There's no market, Mr. M. is told, for his product's greater use. No need to make two millions when only half of it will be absorbed. How like the condition of every railroad in the country today. What road wouldn't be able to handle twice the passenger traffic if it were offered them?

Offered is right. Some of them print a few dodgers to advertise a dollar excursion and think they've done a wonderful thing. Have they talked transportation and sold transportation, until they have stirred the body politic—until the idea of travel occurs constantly in pleasing colors to you and me? I am told it cannot be done. That we know when we want to ship freight and when we want to ride, and that nothing will move us beyond that.

But that is fallacious, and dangerous too. Of course it can be done. The formula therefor is scientifically exact. The manufacturer who decides to put up his volume 20 per cent finds there are three things to do. First he must see that his product is right—that it meets the public idea of

what the public wants. Then he must clean up his organization. He must key every man in it up to the new conception of how much goods he must sell. And then he looks over his finances and costs. He puts down so much for materials, and so much for labor, and so much for selling. And then he goes to it.

A Selling Goal

He will spend for advertising, we will say, on an average of 2½ per cent. Not, mind you, to hold his volume where it is, but to attain a goal—an increase of 10, 20, 30 per cent. Do the railroads need to do something like this? Have any of them ever been known to set for themselves a selling goal? To the business man who does it, the results come so surely that, barring unreasonable folly, he invariably builds up his sales.

Should the railroads do it? Only five American roads so much as used a line of advertising space in the 36 principal national magazines last year. Only a dozen or so spent so much as a hundred thousand dollars in advertising last year. And that for the most part isn't real advertising. I know a road that conducts a great suburban service—three hundred suburban trains in and out of their terminal every day—three magnificent groups of suburban communities to be served. Three high-class experts work incessantly in checking up schedules of these trains. From this checking, the customary pocket time cards for commuters are produced. They are an expensive thing, these little cards. But they are no more advertising than the coal by which the trains are run. Yet their cost is charged that way, along with a hundred other things. There is no way to avoid that. But I mention it because for real advertising, such as influences and creates, there is very little money spent indeed.

The railroad dollar for 1921 was spent as follows: Wages, 46.9 cents; materials and supplies, 26.3 cents; locomotive fuel, 9.5 cents; taxes, 5 cents; rentals and hire of equipment, 1.4 cents, leaving 10.9 cents for fixed charges, improvements, and surplus, if any such there be. For the first six months of 1922 the latter grew to 13.4 cents. Suppose a cent of it was set aside for selling costs—on some of the roads it would amount to several million dollars a year. Suppose it were cut to five mills. That would, in proportion, be less than a tenth of what the average manufacturer pays. And suppose when that were done, the whole thing were spent for actual selling work—that timetable folders and charity donations and subscriptions to the Firemen's Ball were not counted in, and that this great arterial life passage were left open to really vital blood currents. Can some railroad executive get a fleeting vision of what would occur?

"Un-Management"

It is quite likely that there is the very trouble with the whole thing. It is strange indeed how hard it is to make them see. I remember that A. D. Lasker, long before he had tasted the futility of showing the nation how to operate its ships, once said that he knew of no business in which there was so much *un-management* as in the railways. You will note that he didn't say *mis-management*. And I think he was thinking largely of their failure from the standpoint of sales effort. For with all the admirable qualities of our railroad management there is without doubt a spirit of dazed *un-management* in that particular that overlooks a lot of things which the average business man could not overlook for a moment without courting disaster.

How can we get rid of it? It is a strangely tenacious legacy from the days when railroading was more or less backed up by the doubled fist. That is all past long ago. But it seems to have left an inability to do what some one has aptly termed the ability to "think advertisingly," with the result that the roads are failing lamentably properly to advertise their own good qualities. And that is possibly the one big trouble with the roads today. Passenger traffic could be increased, freight movements controlled, general good will, above all else, could be sought and found if only the roads could understand.

The late war taught us that we have to accept great principles daily where formerly a smaller and more restricted view would carry us along. That is true in railroading. There is a tendency to speak of a railroad career today as if it were something that a man should shun. Among railroad executives there is a very general tendency to say that it is a pity that a good man should find himself cast as a railroad man—that the big days for such a career are past. It is doubtful if our best blood—the young men from our universities—are joining the railroad ranks. But it is all based on fallacy. Never in the history of the world has a great nation depended so wholly for its life blood upon one specific thing. Rome could live without her provinces, Greece without her culture, Italy without the Renaissance, and Britain without her far-flung dominions, far more easily than America could do without these arteries of her life.

There will come a big man some day who will see the need of making and binding these arterial interests closer to us—who will stir within us a pride in them that will carry with it justice, and that will interest us in making a greater and broader use of them. He will see from the selling standpoint. He will show us how they are a friendly part of our existence, and how we can put our money into the greater use of them. He will sell us the transportation that nowadays we have to work so hard to persuade the railroads to let us buy.

Utilities' Commissioners' Views on Valuation*

THE COMMITTEE believes that the carriers are endeavoring to establish valuations far in excess of what can fairly be considered reasonable; that the valuation cases—each involving, as it does, millions of dollars—are of very great importance to the country as a whole, as undoubtedly the valuation fixed by the Interstate Commerce Commission will be used as a basis in measuring the rates to be charged.

The Chicago, Rock Island & Pacific case is the first of the large systems to be heard, and it is of the utmost importance that all the elements of value should be well considered and weighed, and ample preparation had so that the principles and rules adopted in the case shall be right, when followed in the other cases so far as applicable. In this Rock Island case, begun and only partially heard, there is an example of what co-ordinated effort will do, as made by the state commissions in the Central Western group. That group was organized for the direct purpose of co-operating in the protection of the public's interests in the case of the Chicago, Rock Island & Pacific and its associated lines. Several conferences were held, and a committee of three commissioners and of engineers was appointed to direct the work and furnish mutual aid and counsel. When the hearing came on at Washington on May 25, this group was represented by counsel, engineers, and other experts, and it is believed that the appearance of these representatives of the states was a very valuable service in that hearing, and will be of more value when we get the other states to join in the further hearing, now only scarcely begun. The states should

* The report of the committee on valuation of the National Association of Railway and Utilities Commissioners at the convention at Detroit on November 14-17, F. P. Woodruff of Iowa, chairman. Other papers and reports of this convention appeared in the *Railway Age* of November 25, page 1001.

be grouped in the different sections and the work together should be done at once, and no effort or expense within the means of the several state commissions should be spared in this work. The tentative value served in accordance with the law should be thoroughly studied by the engineers and statisticians of the various commissions and comparisons of data made—all to be used as a test of the efficiency and correctness of the tentative valuation of such railroad, and evidence should be prepared that could be used as rebuttal to the evidence introduced by the railroads to substantiate the exaggerated claims made in their protest. By the united efforts facts could be produced and shown in each group, or for each railroad, that will show the unreliability of many of the facts shown in the evidence given by the carriers in their attempt to get a high valuation.

What may be called the first part of the work of the commission, so far as steam railroad carriers are concerned, has been well advanced toward completion. The accumulation of data from which tentative valuations may be prepared has been substantially completed for the entire country; and the preparation and service of tentative valuations are now going forward with fair rapidity. By September 1, 1922, the number of tentative valuations served upon carriers had reached 258, covering in the aggregate 360 railroad properties, with 37,048 miles of road and 52,045 of track. While any estimate now made may ultimately be found to fall wide of the mark, it would seem probable that tentative valuations covering all the properties of rail carriers may be completed and served within the next two years.

We find that the second part of the commission's work has as yet scarcely begun. The commission has made three so-called final valuations in contested cases: Texas Midland, Winston-Salem Southbound, and Kansas City Southern. While these valuations, however, were styled final valuations, they were incomplete in that they contained no statement of final value.

The third part of the commission's valuation work is the accumulation of data as to changes in condition or value of carrier properties, and the making of appropriate resulting changes in the valuations covering such properties. This is a most important part of the original scheme of the Valuation Act. What the commission is doing towards it is therefore of great interest. The carriers are required to keep a record by valuation sections of changes in their roadway property through additions or retirement. This record is to show the units of property added or retired and the cost, and the carriers are required to tabulate and file this information with the commission "when directed." The carriers are also required to file "annually" statements showing for each valuation section "the charges for property placed in operation and the credits for property retired from operation that have affected the investment in road and equipment."

The committee concluded in its report that the state commissions have a triple duty to perform:

First, in the application of the guiding principles whereby the underlying facts upon which the values rest were to be determined, errors may have been made. To the extent that such errors have been made, and that the state commissions in their respective states are able by checking the work to demonstrate this, protests should be filed, and evidence offered thereon, so that the errors may be verified by the commission and corrected.

Second, with respect to unit prices applied, and other matters involving the exercise of expert opinion, the carriers are seeking to break down the work of the commission. We have explained that the commission's expert forces are now largely disbanded. The reduction of appropriations as the field work approached completion has made this unavoidable. It is the opinion of this committee that the state commissions should not allow unjust criticism of the commission's work to be made without meeting it to the extent that their limited means will enable them to lend support to it by the evidence of their own experts.

Third, and finally, as the values which have been placed upon carrier properties are reviewed by the commission, the state commissions can, by continuing their efforts, serve the public interest by protesting against the inclusion of elements which appear to be unjust, and which unduly swell those values.

The committee recommended that the president-elect appoint a special committee of technical men to make a thorough study of the rules and methods of the I. C. C. for keeping its valuations current; and that the states traversed by the lines of the Chicago, Rock Island & Pacific contribute $300 to a common fund for the payment of assistance in presenting the evidence in writing and printing briefs in that case.

A resolution was adopted by the convention that the states having membership in this association be placed in six groups as follows:

(1) The New England states.

(2) New York, New Jersey, Maryland, West Virginia, Ohio, Indiana, Michigan and Illinois.

(3) The states south of the Potomac and east of the Mississippi, not including Louisiana.

(4) Wisconsin, Minnesota, the Dakotas, Montana, Idaho and Washington.

(5) Iowa, Montana, Kansas, Nebraska, Colorado, Wyoming, Utah, Nevada and Oregon.

(6) Arkansas, Louisiana, Oklahoma, Texas, New Mexico, Arizona and California.

(Second) That the Valuation Committee of the Association be composed of one member of each of the above named groups. The appointment of the committee to be made by the president-elect of the National Association during the current session of the convention.

(Third) That one commissioner from each state be appointed to form a group committee on valuation to conduct the group activities, the chairman of such group committee to be a member of the National Committee on Valuation.

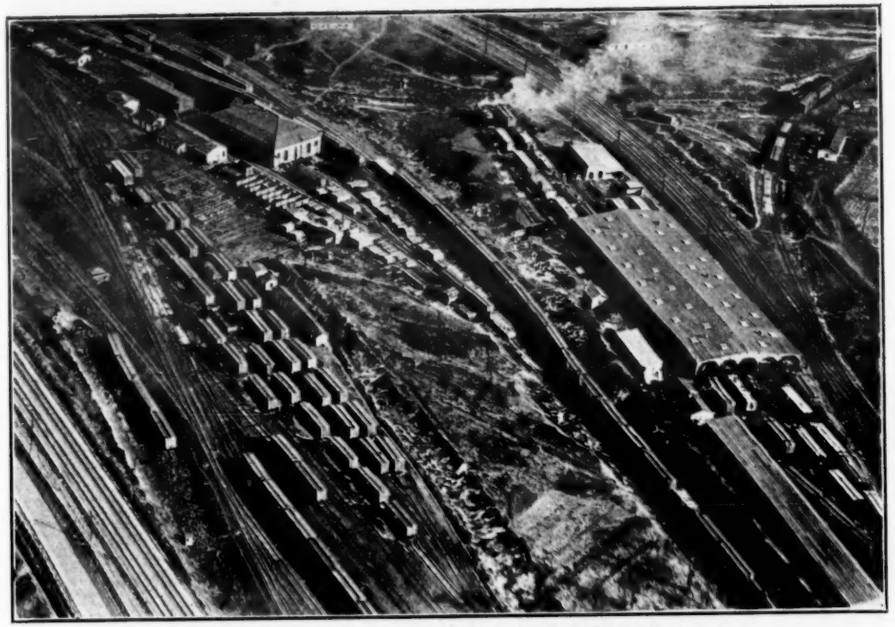
(Fourth) That within 30 days from date of appointment, the chairman of each group call a conference of engineers and commissioners and adopt specific plans for immediate work and make a report of the proceedings of said conference to the chairman of the Valuation Committee of the National Association.

(Fifth) That each group chairman shall report at least once each month the program of the group activities to the chairman of the National Association.

The new Valuation Committee is: Chairman, F. P. Woodruff, Iowa; (group 1) T. W. D. Worthen, New Hampshire; (group 2) E. D. Lewis, West Virginia; (group 3) A. G. Patterson, Alabama; (group 4) L. E. Gettle, Wisconsin; (group 5) H. G. Taylor, Nebraska; (group 6) H. W. Brundige, California.

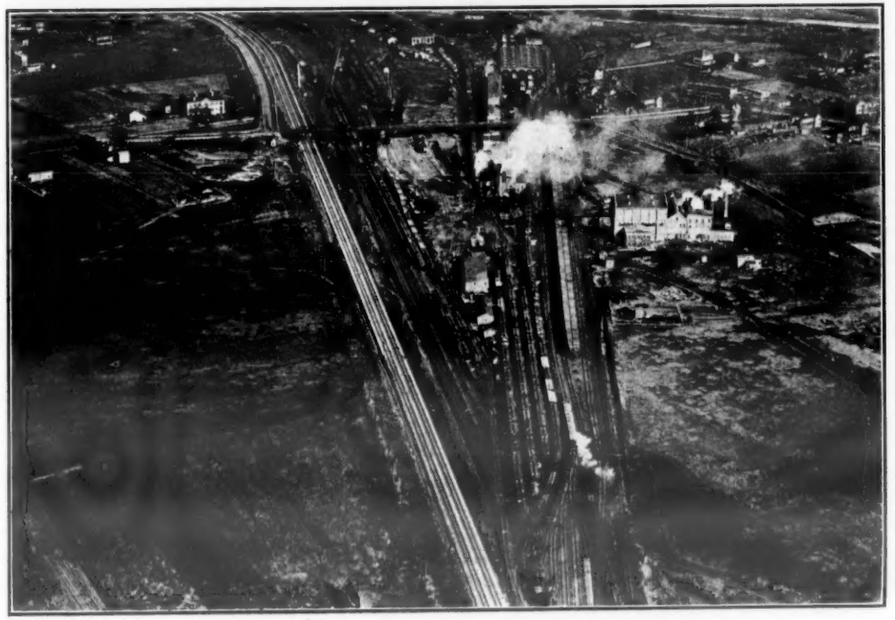
LOYALTY BEGETS LOYALTY.—This is the theme of a letter in the Southern Pacific Bulletin from F. J. Bailey, of Houston, Tex., a conductor. The most striking development in this direction during the past few years, says Mr. Bailey, has been the remarkable change in the attitude of the switchmen as a class. Switchmen were formerly ready, apparently, at anytime, to respond to a call to throw up their jobs, and their strike activities made tremendous difficulties for the railroads. "Now all is changed. They are among the most contented and loyal employees on the railroad. This change in attitude dates from the inauguration of the eight-hour day, and the switchmen's acceptance of it in letter and in spirit. If the train service brotherhoods had been equally loyal to the spirit of this reform and not disloyal to the eight-hour principle through the abnormal mileage still made by some, on the claim of seniority, it would have been better for the railroads, the men and the public."

Entrance from the South



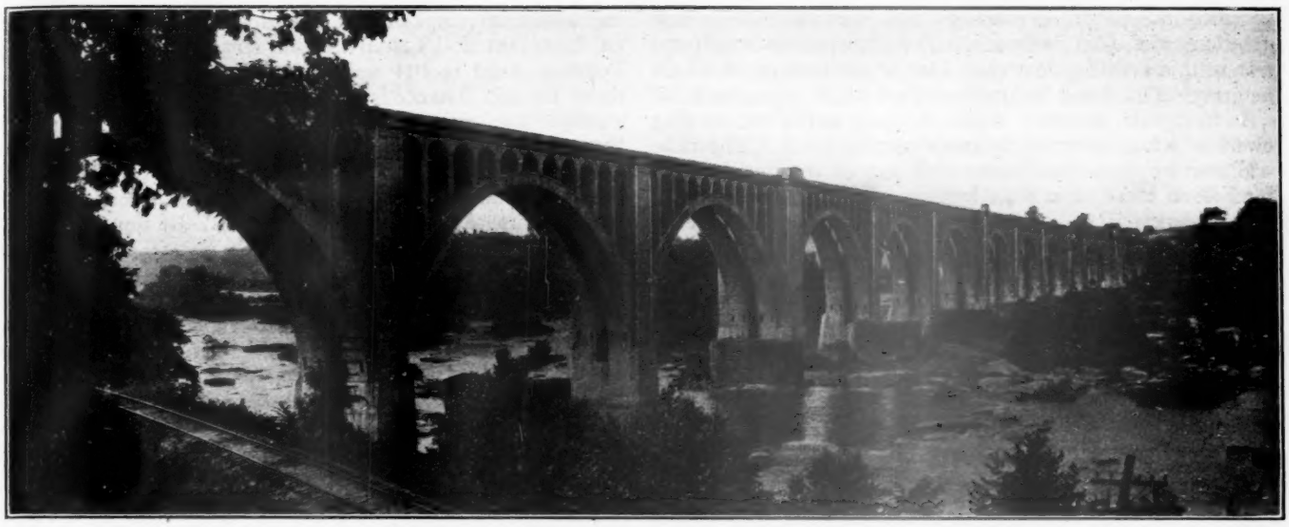
Transfer and Southbound Classification Yard

Entrance from the North



Heavy Repair Yards—F. G. E. Shops—Icing Station

Airplane Views of Potomac Yard



Bridge Across the James River Connecting with the Atlantic Coast Line

Perishable Freight Service Specialty of R. F. & P.

Miles per Train Hour in 1921 Averaged 19.2. Car Miles per Day 44.2. Earned Three Times Standard Return

THE RICHMOND, Fredericksburg & Potomac operates only 117 miles of line. In reality, it consists of only a single freight district. On this district, however, it is doing some things in railway operation that are of more than ordinary interest. This is evidenced by the fact that in 1921 its train speed or miles per train hour averaged 19.2 as against the country's average of 11.5. Its car miles per day averaged 44.2. Because of the interesting manner in which locomotives are doubled over the division daily and the method followed in returning crews to their home terminal at the end of their day's work, the road succeeded in arriving at a figure of 88.9 locomotive miles per locomotive day, which figure was nearly double that for the railroads of the country as a whole.

Earned Nearly Three Times Its Standard Return

The Richmond, Fredericksburg & Potomac is a consistent money maker; so much so, that Moody's Analyses of Railroad Investments gives all its bonds a rating of Aaa, and its stock a rating of Aa. During federal control the property earned nearly three times its standard return.

The road derives its importance because it is a connecting link between the southeastern lines and the lines to the north. It operates a double track railroad of high standards between Richmond and Washington, in addition to which it owns and operates Potomac Yard, one of the most important freight facilities in the country. The company is controlled by six railroads. This control is carried out through ownership by the Richmond-Washington Company of a majority of the "voting" common stock. The Richmond-Washington Company, in turn, is owned equally by the Pennsylvania Railroad, the Baltimore & Ohio, the Atlantic Coast Line, the Southern, the Seaboard Air Line and the Chesapeake & Ohio. The Atlantic Coast Line and the Seaboard Air Line connect with the Richmond, Fredericksburg & Potomac at Richmond, and from there north the business moves as R. F. & P. business.

Interchange of through freight traffic is made with the Pennsylvania and Baltimore & Ohio at Potomac Yard and of passenger traffic with the same roads at Washington.

The Southern railway connects with the Richmond, Fredericksburg & Potomac just south of Alexandria, and has trackage rights over the R. F. & P. to the Potomac river. The Southern's interest is primarily its interest as a tenant line at Potomac Yard. The Chesapeake & Ohio is in a similar position; it uses the Southern Railway from Orange north and reaches the Richmond, Fredericksburg & Potomac in that manner. Some business also is interchanged at Doswell. The Pennsylvania and Baltimore & Ohio are also interested because of their being tenants at Potomac Yard.

Bearing in mind that the Richmond, Fredericksburg & Potomac consists of a double track line between Richmond and Washington, at the northern end of which link is the important interchange freight facility at Potomac Yard, one must, in studying the operations of this road, divide the analysis into two parts; one relating to the main line operations and one to those at Potomac Yard. Attention will be paid first to the main line operations.

A Prosperous Appearing Property

In riding over the Richmond, Fredericksburg & Potomac one is impressed by the prosperous appearance of the property as a whole. The line is laid with 100 lb. rail and is well maintained. It is ballasted with a high grade of washed gravel. The ballast is lined, the banks and ditches are clean-cut and neat, the road is block-signalled with upper quadrant, three-position signals, and stations and signs are well painted and clean in appearance. White oak ties are standard. Tie plates are used on curves, although there are also 60 miles of tangent track laid to the high standard of tie plates on oak ties. The road, incidentally, at the present time is relaying most of its rail. In 1921 it laid about 60 miles and the program called for new rail entirely at the end of about three years.

It is rather difficult to speak of the Richmond, Fredericksburg & Potomac without referring at length to its ballast. This road was one of the first to use washed gravel ballast and because of its having accessible at Fredericksburg an unusually hard gravel, the use of this ballast has been

extremely successful; so much so, that it has attracted much attention from other railroads. The illustrations which appear in this article give a clear idea of the manner in which the gravel is used and the good roadbed which it produces.

As to signals, attention should be paid to the interlocking towers which exist at nearly every passing track. The railroad further than that makes full use of its signals, and it relies on these signals as much as possible in operation. The tendency is to use messages instead of train orders wherever possible and, in addition, the road has installed take-siding signals which have proved of material assistance to efficient operation. The road uses telephone dispatching and in general follows the modern idea of using the telephone to the largest possible extent.

Road's Specialty Is Perishables

Naturally, under the conditions, the traffic of the line is rather diversified. In 1921 products of agriculture made up 23.5 per cent; products of animals, 1.35 per cent; products of mines, 17.4 per cent; products of forests, 24.2 per cent; manufacturers and miscellaneous, 2.52 per cent. The road's specialty is perishables. In 1921, of the total tonnage carried 12.3 per cent was citrous fruits and other fresh fruits; 6.3 per cent potatoes and other fresh vegetables. Cotton supplies only 0.4 per cent of the total tonnage but the Richmond, Fredericksburg & Potomac like most of the roads to the south of it, depends upon the welfare of the cotton industry considerably more than its proportion of tonnage in cotton would indicate. The reason is that cotton represents such a large proportion of the purchasing power of the South.

The citrous fruit traffic is naturally northbound. The manufactured products represent the southbound traffic and the volume of these manufactured products depends upon the prosperity of the Southeast. The relative importance of perishable freight to the R. F. & P. was indicated rather pointedly in 1921. The road in that year had the largest perishable movement in its history, but the lowest of all other freight for some years. The perishable freight, in other words, saved the day. The road expects that the 1922 movement will even exceed the record-breaking figures for 1921 of 49,361 cars.

The large volume of perishable traffic explains in no small measure the average of 19.2 miles per train hour. The Atlantic Coast Line and the Seaboard Air Line are two of the leading carriers of perishable commodities in the United States because they serve the agricultural communities of Florida and the vegetable and fruit area extending northward along the Atlantic seaboard. These commodities move in fast trains to Richmond. They are turned over to the Richmond, Fredericksburg & Potomac at Acca, the yard adjacent to the Richmond passenger terminal, and they move over the Richmond, Fredericksburg & Potomac at a speed but slightly slower than that of the passenger trains. After their arrival at Potomac Yard they are forwarded under fast schedules to the consuming centers of Baltimore, Philadelphia, New York, Boston, etc. The standard freight locomotives are Pacifics with a tractive effort of from 26,000 lb. to 47,320 lb. Because of the high speeds maintained, the average train load is not high. In 1921 the road had a net tons per train, including revenue and non-revenue freight, of 339. This average, incidentally, was lowered considerably by the small amount of southbound business which was carried during the year. The average train load in 1920 was 445.

Freight Movement Not Materially Slower Than Passenger

The statement was made above that freight movement over the Richmond, Fredericksburg & Potomac is not materially slower than that of the passenger trains. Of the 34 scheduled passenger trains 20 are operated in connection with the Atlantic Coast Line and Seaboard Air Line. In other words, the statement compares the operation of freight trains with an important and fast passenger service. From Acca to Potomac Yard is 104 miles. The average time of freight trains for this distance is usually kept below five hours. The average crew time, including terminal time at Acca and Potomac Yard is usually kept at approximately 7 hours. June, 1921, was an exceptionally good month in this respect. During that month the crews averaged 6 hr. 28 min.; divided terminal time at Acca, 1 hr. 10 min.; road time, 4 hr. 15 min; at Potomac Yard, 53 min.

The railroad has also compiled some interesting figures relative to the average time which a car of perishable freight spends on Richmond, Fredericksburg & Potomac rails. In May, 1921, which presumably is an average month, this figure was 6 hr. 39 min. from the time the car was turned over to the Richmond, Fredericksburg & Potomac at Acca to the time it was delivered at Potomac Yard. The average included 1 hr. 7 min., representing the time from delivery to the Richmond, Fredericksburg & Potomac at Acca until it left that yard. The road time from Acca to the interlocking tower at Potomac Yard was 4 hr. 34 min. The movement to the receiving yard at Potomac Yard required 58 additional minutes. An analysis of this kind should also include the time the cars were kept in Potomac Yard before delivery to the Pennsylvania or Baltimore & Ohio, but because of the large number of cars held for reconsignment at the yard, as will be explained below, this particular figure would not prove of great value in this connection.

The road does, of course, make some distinction as between perishable and other freight, the perishable in all cases being given preferred attention, but the policy as a whole is to move all trains at high speed. The road, in other words, does not draw the sharp line of demarcation between perishable or manifest and ordinary drag freight, as is the rule on most roads. This is made possible on account of the small proportion of slow freight handled.

These conditions permit the road to avail itself of a number of interesting and unusual methods of operation. For one thing, it is the policy to have all the crew layovers at the home terminal. All of the road's freight crews have Richmond as their home terminal. A crew is called for a run from Richmond to Potomac Yard and after a short layover at the latter point returns to Richmond. The locomotives are pooled. This method has been found very successful and there can be no question but that it is much more satisfactory from the point of view of the crews who have the advantage of being able to get back to the home terminal at the end of their day's work, and besides having their sleep at home are not subjected to additional expenses because of being away from home.

To secure an average of 19.2 miles per train hour requires a high grade roadbed and the use of every facility to keep the trains in motion. These points have been brought out above because mention has been made of the high grade double track line, the completeness of the interlocking system and the use of automatic signals. As a matter of fact, the road normally succeeds in operating a freight train from Richmond to Potomac Yard going into a passing track but once. The automatic signals and interlocking facilitate this movement and keep the time required at a minimum.

Potomac Yard

Potomac Yard is in Virginia and lies about four and one-half miles south of Washington. It was formerly operated by the Washington Southern which was merged with the R. F. & P. in 1920. As already noted, there are five railroads that operate jointly into the terminal; namely, the R. F. & P., the Chesapeake & Ohio, the Southern, the Pennsylvania Railroad and the Baltimore & Ohio. Potomac Yard is not new. It has been described in this paper and elsewhere but not a great deal has been said concerning the

manner of its operation. The following description and details have been supplied by an R. F. & P. officer.

The Facilities at Potomac Yard

Potomac Yard has about 63 miles of trackage. There are two receiving yards, one northbound and one southbound. The northbound receiving yard consists of 11 tracks, including two tracks for re-icing purposes which can accommodate 32 cars each, or a total set-up of 64 cars for re-icing at one time. The 11 receiving tracks range in length from 38 to 72 cars each, or a total capacity of 509 cars. The southbound receiving yard consists of eight tracks ranging from 55 to 65 cars in length with a total capacity of 498 cars.

There are two classification yards, the northbound yard consisting of 30 tracks ranging in length from 21 to 60 cars each, or a total capacity of 1,142 cars, while the southbound classification yard consists of 27 tracks ranging in length from 19 to 54 cars each, or a total capacity of 1,053 cars.

R. F. & P. Track is Well Maintained

Both yards are hump yards, the northbound yard being equipped with a system of electric switch control. In addition to the above, there are two advance yards, one northbound and one southbound, consisting of three tracks each, which are used to take care of the overflow from the classification tracks. It frequently occurs that trains are dispatched from the advance yards, although the greater number are made up and dispatched from the classification tracks, providing power is available. At present work is in progress looking to the expansion of the northbound classification yard by the addition of several tracks and the lengthening of existing tracks.

To care for bad-order cars there are two yards for light repairs and one yard for heavy repairs, having a total of 13 tracks with a standing capacity of 327 cars. There is also what is termed a bulk transfer yard consisting of six tracks in groups of two tracks each having a total capacity of 61 cars, the loading track elevated about six inches above the track on which the empty cars are placed for receiving the loads. Potomac Yard gateway being the interchange point between the southern and northern lines, a great number of cars are received from the south which will not pass the clearances of the northern connections. This yard is used for such transfer exclusively.

The LCL transfer consists of a platform about 1,100 ft. in length. There are eight tracks, four on either side of the platform, with a total capacity of 158 cars placed in working position. An average of 120 loads of LCL freight is handled daily, classified into 45 classifications northbound and 48 classifications southbound, an imaginary line about the center of the platform dividing the northbound from the southbound business.

The icing facilities are modern. The ice house has a capacity of about 130 tons per day with a storage capacity of 12,000 tons. The factory is adjacent to the platform where the re-icing service is performed, the ice being stored as near as possible on a level with the incline from the ice factory to a point near the top of the cars where it is automatically lowered to a platform on a level with the top of the cars.

The enginehouse facilities consist of a 12-stall enginehouse with an 80-ft. turntable, three ash pit tracks and a power plant for heating and lighting purposes. An additional turntable is now being installed. One of the tenant lines, the Southern Railway, does not use the enginehouse facilities, as it has its own in Alexandria.

The stock pen facilities consist of 32 livestock pens used for the unloading, feeding, watering and resting of livestock in transit. New and modern pens are now under construction in a new location. No deliveries are made at the yard of any class of freight, except company materials.

Method of Operation

Upon arrival of trains from the tenant lines the waybills are delivered to the yardmaster for booking and record purposes, after which they are passed through the hands of the agent and the revision bureau, an auxiliary department to

the general auditor's office, for the purpose of revising the waybills for routes, rates and revenue. This operation means considerable delay to the movement of trains from the receiving yard to the classification yard; but, during the interval in which the waybills are being revised it is the custom to re-ice, inspect and make running repairs while trains are in the receiving yard. Upon the return of the waybills to the yardmaster the trains are considered as being delivered to connections. They are then passed over the humps into the various classification tracks.

Classifications and Scheduled Trains—Northbound

There are 17 classifications made for the Pennsylvania Railroad and six for the Baltimore & Ohio. Perishable freight via the P. R. R. is classified to move in solid trains for New York, Philadelphia, Baltimore, New England points and points west and north of Harrisburg, Pa. Two com- consisting of citrus and the other, high class perishable. modity classifications are made for New York alone, one In the case of the Baltimore & Ohio, perishable classifications are made for New York, Philadelphia and Baltimore, and one for the west.

As a rule, there is a total of eight northbound perishable trains leaving Potomac Yard daily between the hours of midnight and 7:00 a. m. Three of these trains are for New York and Jersey City via the P. R. R., known as MD-2 (symbol), scheduled to leave Potomac Yard at 4:30 a. m. for next morning market delivery. This train is limited to 45 cars.

Symbol train MD-6 has cars for New England points only and is scheduled to leave Potomac Yard at 6:00 a. m., with a limit of 45 cars, for second morning market delivery. It frequently occurs that these trains are run in sections.

Symbol train MD-18 has cars for Baltimore, Md., and is scheduled to leave Potomac Yard at 7:15 a. m., daily. It also has perishable freight for Harrisburg, Pa., and points north and west, making second day's delivery for points such as Pittsburgh, Erie, Buffalo, Syracuse, Rochester, etc., and also points in the New England territory via the Wilkes-Barre gateway.

B. & O. train No. 92 scheduled to leave Potomac Yard at 3:00 a. m., handles perishable and high class freight for Philadelphia and intermediate points, as well as perishable and high class freight for points on the Philadelphia & Reading and the Jersey Central.

B. & O. No. 97 scheduled to leave at 3:15 a. m., daily moves perishable and high class freight for points west via the B. & O.

Classifications and Scheduled Trains—Southbound

Southbound trains are handled in exactly the same manner as northbound insofar as waybills, inspection, etc., are concerned, excepting that in the case of trains arriving southbound with cars to be re-iced, it is necessary to handle such cars from the southward classification yard to the re-icing station which is located in the northbound yard.

The Richmond, Fredericksburg & Potomac is the connecting line with the Atlantic Coast Line and Seaboard Air Line, and necessarily at Potomac Yard separate classifications are made for those lines to avoid switching at the Richmond terminal.

The Richmond, Fredericksburg & Potomac has three arranged schedules from Potomac Yard, 3:30 a. m., 5:15 p. m. and 11:30 p. m. The latter train handles perishable and high class freight loaded in Baltimore and Washington for delivery in Richmond the following morning, and perishable and high class freight for connections at Richmond. By reason of the heavy northbound movement the R. F. & P. at all times has sufficient power to keep the southbound freight moving currently.

The Southern Railway has four scheduled trains from Potomac Yard daily. Train No. 85, scheduled to leave at 9:00 a. m., handles perishable and high class freight for points between Potomac Yard and Charlotte and west of Asheville, N. C. Train No. 53 scheduled to leave at 11:00 p. m., daily, has perishable and high class freight for Columbia, S. C., Atlanta, Ga., and points beyond. The other two are local connections, one scheduled to leave at 1:30 a.m., and the other at 1:30 p. m., daily, and both handling cars for points between Potomac Yard and Charlottesville on the main line, and branch lines.

The Chesapeake & Ohio has one scheduled train from Potomac Yard, daily, at 11:30 p. m., covering perishable and high class freight for Charlottesville, Va., and points west.

70,920 Cars of Perishables in 1921

During the year 1921 a total of 70,920 cars of perishables, exclusive of livestock, passed through Potomac Yard for

Airplane View of Broad Street Station, Richmond, Va.

northern and western markets. Of this number, 6,440 cars were peaches from the southern peach territory. Of these 2,321 were destined to New York City, 919 to Boston and other New England points, 670 to Philadelphia, 668 to Jersey City, while the balance moved to miscellaneous destinations. Of the 2,321 cars destined to New York City, only 64 failed to make the market for which they were intended, due to engine and equipment failures as well as improper classification, etc.; at the same time, only 20 cars of the above number were received late from southern connections.

The daily movement of cars handled through Potomac Yard averages 3,000, although a maximum of 4,600 cars has been reached. There are 21 crews in service, normally, to handle the business, which number is increased with the heavy movement.

During the peach season all records so far as re-icing and dispatching cars are concerned were broken. On July 5, 1921, 490 cars were re-iced within a 24-hour period, consuming 1,132,566 lb. of ice in the performance; this, of course, included cars held at Potomac Yard for reconsignment or diversion purposes.

One of Potomac Yard's Problems Is Reconsignment and Diversion

The privilege has been extended to the Produce Dealers' Association, through permission from the Interstate Commerce Commission, to make this a holding yard for reconsignment and diversion of perishable freight. The result is that cars are billed from the south as well as the north to Potomac Yard with a privilege of reconsigning them to a point beyond for the purposes of controlling or meeting the

various markets. It is stated by representatives of the Produce Dealers' Association that without this privelege the markets would be glutted causing a loss of considerable perishable freight. This terminal, considered the principal gateway between the north and the south, has within recent years been claimed by the perishable produce dealers to be the most important distributing point in the eastern country. It frequently occurs during the perishable season that as many as 250 to 400 cars of perishable freight of all kinds are held at this point for reconsignment or diversion orders. The usual practice is for the produce dealers to have local representatives in Washington, D. C., or Alexandria, Va., who are advised concerning the perishable freight moving or which is held at Potomac Yard for inspection. These representatives report details to the various produce dealers in the large cities and the cars are sold by market transaction from the Yard.

R. F. & P. Supervision and Statistics

The Richmond, Fredericksburg & Potomac is a small road, so supervision of its operations does not become as difficult a factor as might be the case on a larger and more complicated system. This does not prevent the road, however, from issuing each month some very adequate statistics of earnings and operations. The monthly report gives complete details of operating income and expenses by primary accounts with comparisons with the same month last year and accumulated for the present year. Similarly a detailed analysis is shown of train and car miles, locomotive miles,

Another View of Broad Street Station, Richmond, Showing the Platforms and Loop Tracks

etc., locomotive hours, the latter under 12 items; tons of coal per locomotive mile and locomotive hour, etc.

One notices on the railroad an unusual spirit of loyalty. The section labor, to take one example, is practically entirely native labor. The officers and men seem to be extremely proud of their railroad and seem to be helping in every way to make it show the best results possible.

The Richmond shops are old and considerable money will have to be spent in the near future on both buildings and equipment. This, however, the road has in mind and a site has been chosen for an entirely new installation of engine terminal and shop facilities. The equipment is maintained in good order. The high percentage of superheated steam locomotives is especially noticeable.

The earning of nearly three times its standard return is the Richmond, Fredericksburg & Potomac's record during the period of federal control. This was the largest percentage of standard return earned we believe by any property operated by the government. The reason for the favorable operating results was due primarily to its strategic position as the link between the north and south carriers which has been emphasized in the foregoing paragraphs. The road carried supplies to the southern camps and it was used as part of the routing to the embarkation port at Norfolk and Newport News. Further than that it had a large troop movement both to and from camps and to the transports at Hampton Roads. In view of the earnings during the period of federal control, the road naturally did not decide to accept the guaranty, for the six months of the guaranty period and it earned $500,000 over what its guaranty would have been.

Since the return to private control, the road has not been doing quite so well because of the falling off in business. This is shown by the figures of net railway operating income. The standard return for the property, including the Washington Southern, which was merged in 1920, was $1,604,204. In 1918 the road had a net railway operating income, including as before the Washington Southern, of $4,761,617. In 1919 it earned $4,639,053. In 1920 the net railway operating income had fallen to $1,766,089 and the figure for 1921 fell still further to $1,275,457.

The total tons of revenue freight carried in 1921 were 3,363,411. The revenue ton-miles were 298,386,813, a decrease of 24 per cent from 1920. The average haul was 90.5 miles, this being nearly the entire length of the road. An interesting feature of the operating figures is, as is to be expected from the conditions, the large percentage of traffic received from connections. In 1921 the road handled 3,337,874 tons of freight of which it originated 564,150 tons and received from connections 2,773,724 tons. The number of tons freight carried per mile of road totaled 2,837,846.

In addition to its freight traffic, the Richmond, Fredericksburg & Potomac carries a sizeable passenger business. For the year 1921 the number of passengers carried totaled 1,443,924, the passenger miles totaling 98,498,452, which was a decrease of 23 per cent from 1920. The passenger business is primarily that received from connecting lines. In other words, the road handles between Washington and Richmond the through trains of the Atlantic Coast Line and the Seaboard Air Line. The Richmond passenger terminal, known as Broad Street Station, is owned jointly by the Richmond, Fredericksburg & Potomac and the Atlantic Coast Line. The Seaboard Air Line trains, however, use the Main Street Station in another part of the city.

One of the interesting features of the Richmond terminal is the fact that all of its tracks are on loops. Every train, whether northbound or southbound, goes through the station in the same direction and the arrangement of the facilities is such that the road succeeds in having its locomotives spend but 8 minutes on the average after being uncoupled before reaching the roundhouse. A complete description of the Broad Street Station will be found in the *Railway Age* of February 14, 1919, page 401.

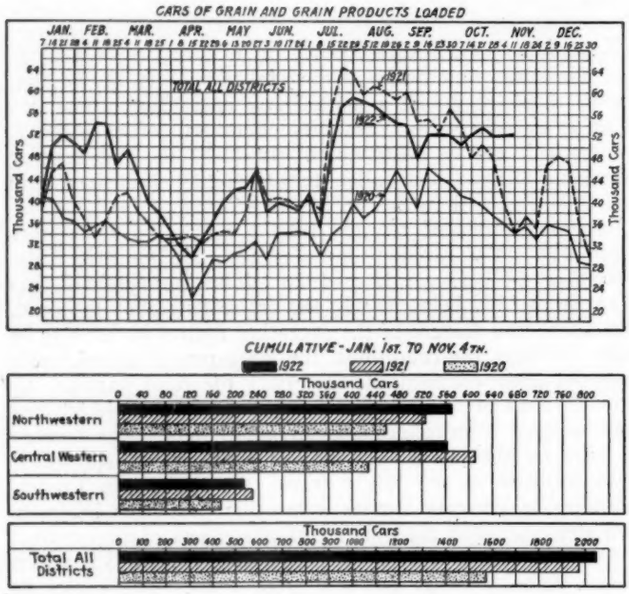
The outstanding funded debt of the Richmond, Fredericksburg & Potomac amounts to $8,491,800 including $1,311,800 of equipment notes. The stock totals $9,417,400, including $1,316,900, "voting" common stock; $481,100, guaranteed 7 per cent stock; $19,300, guaranteed 6 per cent stock; $3,600,100, non-voting dividend obligations and $4,000,000, 6 per cent, non-voting, common stock. The Richmond-Washington Company which is jointly controlled by six roads owns $947,200 of the voting common stock. The 6 per cent, non-voting common stock is entitled to receive the same dividends as may be declared upon the common voting stock but not over 6 per cent. In 1920 and 1921 all of the shares except this issue received 9 per cent.

A large number of the shares of the road are owned by the state of Virginia. It is interesting in this connection to learn that the state of Virginia is using the proceeds on some of this stock in the sinking fund of one of its bond issues. In other words, the bonds are being carried and retired by means of ownership of the stock.

Freight Car Loading

WASHINGTON, D. C.

REVENUE freight car loading increased during the week ended November 18 to 969,094 cars, the preceding week having included the partial holidays on election day and armistice day. This was also an increase as compared with the corresponding week of last year of 178,731 cars and as compared with the corresponding week of 1920 of 79,956 cars. Increases as compared with 1920 were shown in the loading of grain and grain products, livestock, forest products, merchandise and miscellaneous freight and in all



districts except the Pocahontas and Southwestern. As compared with last year increases were shown in all classes of commodities except l.c.l. merchandise. The largest increase as compared with last year was in miscellaneous freight, of which 77,384 cars more were loaded. Coal loading was the largest it has been since the strike, 205,024, an increase as compared with last year of 36,586 cars, but 11,298 cars less than the corresponding week of 1920. This represents the fourth consecutive week of loading in excess of 1920.

The freight car shortage showed a further reduction during the period from November 8 to 15 to 158,236, while for the same period there were surpluses amounting to 4,945. The shortage included 82,533 box cars and 42,827 coal cars.

Labor Board Approves Piece Work

THE PIECE-WORK SYSTEM as established in the Elkhart, Ind., locomotive shops of the New York Central some time ago has been definitely approved by the Railroad Labor Board in a decision handed down last week because the installation of this system "was in accordance with the expressed wishes of a majority of the employees at that point, and in conformity with the agreement between the duly authorized representatives." The testimony in this case showed that a substantial majority of the Elkhart shop employees expressed a desire to work under a piece-work system. Following conferences between the vice-president of that road and the authorized representatives of the unions, it was agreed that the matter should be placed before the employees in an open meeting and the decision whether or not to establish piece-work be decided in this manner. This meeting was held but representatives of the employees later took the position that the Elkhart shopmen had been coerced by officers of the company. As a result it was proposed to take a secret ballot at Elkhart again placing the proposition before the men. This proposal was turned down by the system shop-craft leaders and the matter came before the Railroad Labor Board.

The Board's decision holds that the evidence submitted in the case did not prove coercion and that inasmuch as the agreement was made between the duly authorized representatives of the men and the carriers the result of this agreement should stand.

A seventeen page dissenting opinion was appended to the decision by A. O. Wharton and Albert Phillips, members of the labor group on the Board, who reiterated a great deal of the testimony introduced in this case by the employees, drawing the conclusion that "the outstanding indisputable facts are that the method adopted by the carrier were not in accord with any recognized principle of justice and fair play, both of which it is assumed were the guarantees accruing to railroad employees under the provisions of the Transportation Act and the decisions of the Labor Board."

REVENUE FREIGHT LOADED

SUMMARY—ALL DISTRICTS, COMPARISON OF TOTALS THIS YEAR, LAST YEAR, TWO YEARS AGO. WEEK ENDED SATURDAY, NOVEMBER 18, 1922

Districts	Year	Grain and grain products	Live stock	Coal	Coke	Forest products	Ore	Mdse. L.C.L.	Miscellaneous	Total revenue freight loaded: This year 1922	Corresponding year 1921	Corresponding year 1920
Eastern	1922	12,440	4,231	67,561	2,517	5,903	4,412	64,662	91,617	253,343	.....	.....
	1921	9,045	4,054	48,182	1,809	4,330	2,073	63,969	69,450	.....	202,912	209,029
Allegheny	1922	3,725	3,868	58,178	5,948	3,607	7,767	46,881	74,177	204,151	.....	.....
	1921	2,372	3,498	47,983	2,891	2,928	3,373	47,520	53,366	.....	163,931	188,006
Pocahontas	1922	254	120	18,498	577	1,601	100	5,594	3,765	30,509	.....	.....
	1921	212	181	20,781	168	1,275	3	5,656	3,115	.....	31,391	32,135
Southern	1922	3,849	2,506	23,387	1,306	21,085	1,267	38,502	44,312	136,214	.....	.....
	1921	2,951	1,820	20,395	543	16,763	479	38,065	36,545	.....	117,561	128,412
Northwestern	1922	16,658	11,411	10,224	1,640	15,233	16,495	26,653	36,003	134,317	.....	.....
	1921	10,194	9,373	8,758	810	11,444	877	27,136	28,334	.....	96,926	128,759
Central Western	1922	13,121	15,142	21,471	272	6,733	2,186	30,972	52,872	142,769	.....	.....
	1921	9,588	12,488	18,420	138	6,570	757	31,082	37,849	.....	116,892	134,086
Southwestern	1922	5,157	3,457	5,705	171	7,241	553	15,658	29,849	67,791	.....	.....
	1921	3,479	2,878	3,919	105	7,165	773	15,879	26,552	.....	60,750	68,711
Total Western districts	1922	34,936	30,010	37,400	2,083	29,207	19,234	73,283	118,724	344,877	.....	.....
	1921	23,261	24,739	31,097	1,053	25,179	2,407	74,097	92,735	.....	274,568	331,556
Total, all roads	1922	55,204	40,735	205,024	12,431	61,403	32,780	228,922	332,595	969,094	.....	.....
	1921	37,841	34,292	168,438	6,464	50,475	8,335	229,307	255,211	.....	790,363	.....
	1920	35,753	40,579	216,322	13,625	53,934	37,674	202,554	288,697	.....	.....	889,138
Increase compared	1921	17,363	6,443	36,586	5,967	10,928	24,445	.....	77,384	178,731	.....	.....
Decrease compared	1921	.....	.....	.....	.....	.....	.....	385	.....	.....	.....	.....
Increase compared	1920	19,451	156	.....	.....	7,469	.....	26,368	43,898	79,956	.....	.....
Decrease compared	1920	.....	.....	11,298	1,194	.....	4,894	.....	.....	.....	.....	.....
November 18	1922	55,204	40,735	205,024	12,431	61,403	32,780	228,922	332,595	969,894	790,363	889,138
November 11	1922	52,501	38,001	188,312	12,273	60,392	39,383	228,050	334,997	953,909	755,777	927,586
November 4	1922	51,912	39,731	194,077	11,641	60,013	47,046	234,737	355,670	994,827	837,576	915,615
October 28	1922	51,913	42,644	197,928	11,388	60,584	48,005	233,680	368,338	1,014,480	951,384	981,242
October 21	1922	53,680	40,473	196,771	10,631	60,344	45,468	231,797	364,595	1,003,759	964,811	1,008,818

Compiled by the Car Service Division of the American Railway Association.

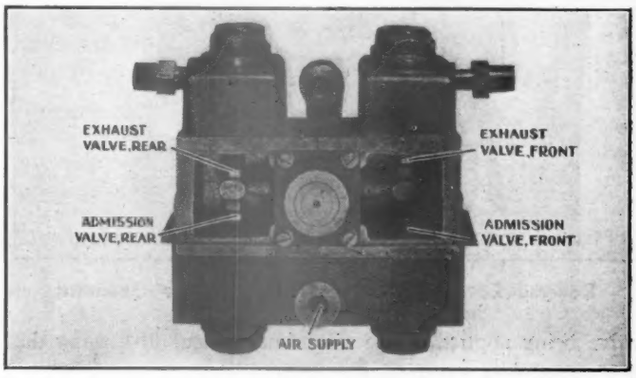
All-Service Locomotive Power Reverse Gear

New Non-Creeping Power Reverse Gear Equally Adapted to Passenger, Freight or Switching Service

THE ALL-SERVICE power reverse gear is the result of developments extending over a period of about four years, during which the designers, the Transportation Devices Corporation, Indianapolis, Ind., carried on an extensive investigation covering all phases of the reverse gear problem. The concrete result has been the incorporation in this gear of certain features, the value of which has been amply demonstrated.

Desirable features of construction and operation claimed for the All-Service reverse gear include equal adaptability to passenger, freight or switching service, interchangeability with the majority of reverse gears now in service, and positive prevention of creeping. Fine adjustment, air cushioning is provided for passenger and freight service, and quick reverse, easy handling for switching service. In addition, stuffing boxes and glands are eliminated, and the operating valve is readily removable for repairs without removing the entire gear from the locomotive. Many of the parts subject to wear can be obtained from standard stock always carried by the railroads. The provisions made for lubrication are such that in this respect the gears require no attention from the enginemen.

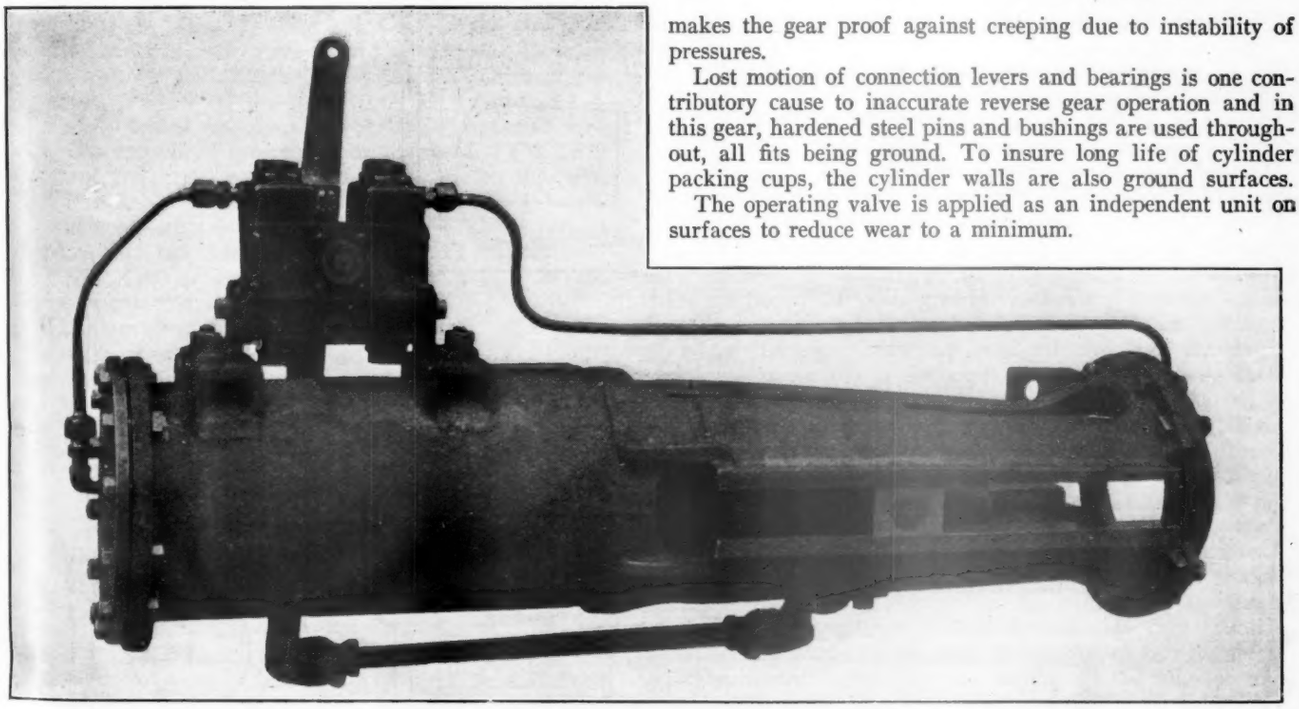
To obtain the above features, the body of the gear is made an integral casting, embodying the cylinder and guides, one of the gear. This permits employing the same methods and materials in successful use for years in packing air brake cylinders; cylinder leakage is reduced to the minimum; and there is no possibility of air leaking from one pressure chamber to the other. Furthermore, the absence of any piston rod or stuffing box as a contributory cause for leakage makes the gear proof against creeping due to instability of pressures.



The Operating Valve Is an Independent Unit with Micrometer Adjustments for the Four Poppet Valves

Lost motion of connection levers and bearings is one contributory cause to inaccurate reverse gear operation and in this gear, hardened steel pins and bushings are used throughout, all fits being ground. To insure long life of cylinder packing cups, the cylinder walls are also ground surfaces.

The operating valve is applied as an independent unit on surfaces to reduce wear to a minimum.

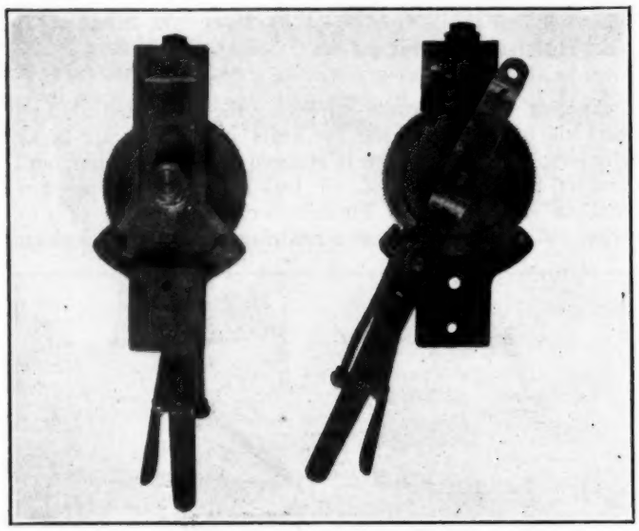


All-Service Power Reverse Gear with Cylinder and Guides on Integral Casting

cylinder head and bolted joint being thus eliminated. Any load on the gear is supported between the points of attachment to the locomotive, and the cylinder itself takes no load other than internal pressure. A floating cylinder, moving within the main body cylinder, and a fixed piston head are provided, thus eliminating the usual piston rod, crosshead, stuffing box and packing. By this construction the packing rings, or sealing medium, are subjected to air pressure in one direction only for each of the air pressure chambers

The operating valve is applied as an independent unit on the gear, performing the same function as the triple valve with respect to the brake cylinder or reservoir. The four-poppet valve principle is employed to give long life to valves and allow separate adjustments of exhausts and admissions for each of the two air chambers. Micrometer adjustments are provided for each poppet valve to allow of independent clearance, or no clearance at all, and to make the gear sensitive to any adjustments that may be required, either because

of the gear moving itself, or being moved by the engineman. It is apparent from the illustrations that this valve can be readily removed and taken to a bench for repairs, another valve being applied in the meantime without disturbing the gear or unduly delaying the locomotive.



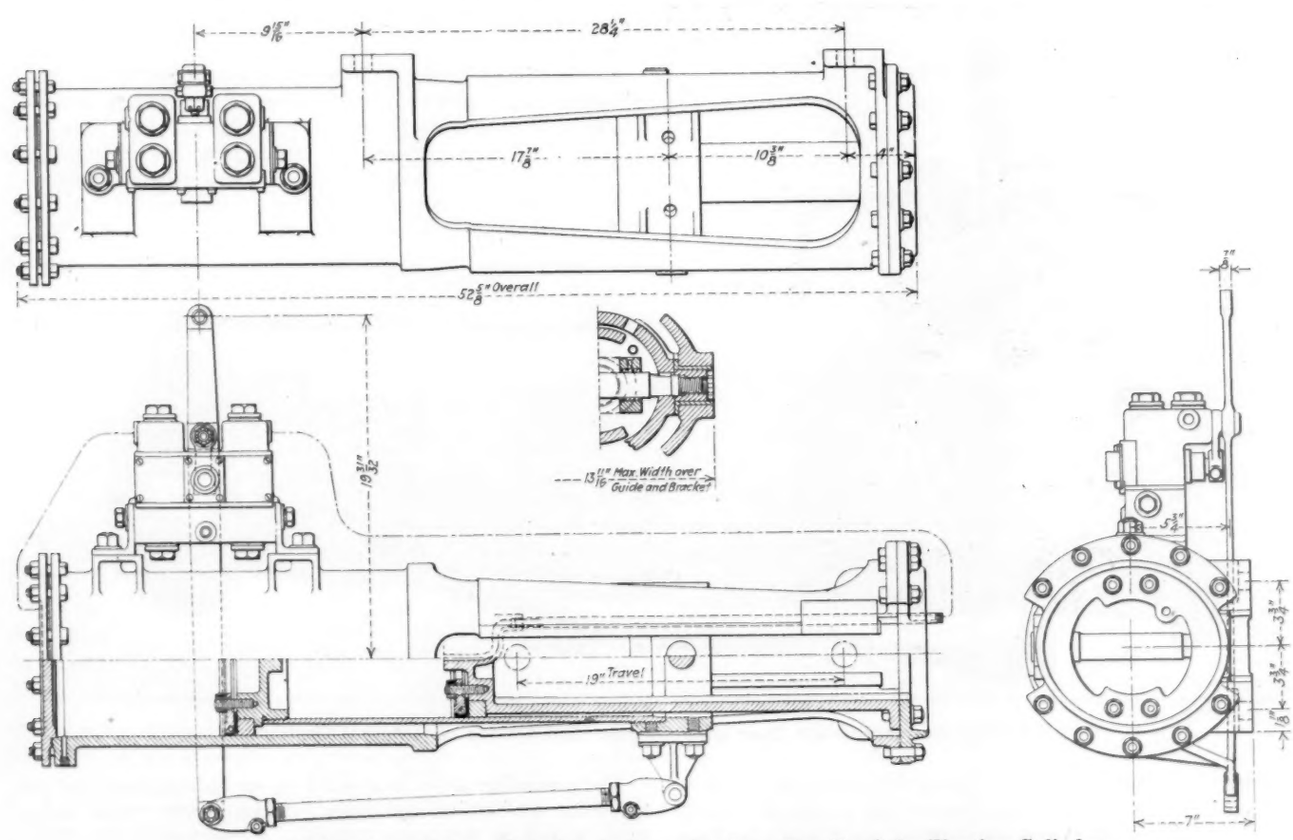
Reverse Lever with Fine Tooth Circular Quadrant

Some unusual features are included in the reverse lever and especially the quadrant. A circular quadrant without stops is used to insure full travel of the level. The wear of the quadrant teeth with corresponding lost motion of the lever is compensated for in revolving a new set of teeth to the operating arc of the lever. V-notched teeth are used to make available a large number of adjustments. The notches and quadrant latch are so designed that the reverse lever can be placed in any cut-off position desired. The fineness of adjustment is determined by the fineness of the engineman's movement of the lever.

The valve and lever construction is such that the speed of the reverse gear crosshead is proportionally the same as the reverse lever, preventing "slamming" in reversing and "surging" when the slack is taken up. The pull on the reverse lever need be no greater than can be exerted by one hand, sufficient to open the valves, the power of the gear moving the lever. The air consumption is reduced to that required to fill the increment of volume from which the gear is adjusted. This reverse gear can be readily applied to locomotives with either high or low-hung reach rods, and it is especially designed to work with automatic control of cut-off.

Continuous service for three years without attention of any kind is the record established by one installation of All-Service gear. This gear is in service on high-speed Atlantic type passenger locomotives where convenience of adjustment and stability of cut-off are particularly essential. Several gears have been in use a shorter period and as yet have required no adjustments.

THE FERRYBOAT "BUFFALO," a new vessel of the Delaware, Lackawanna & Western, was launched on November 22 at Elizabethport, N. J. The new vessel is 221 feet long with a carrying capacity of 1,000 passengers; and is to be used between New York and Hoboken. The Philadelphia & Reading has just ordered two new ferryboats for use between Philadelphia, Pa., and Camden, N. J., where, within the last two years, the movement of vehicles by ferry has increased about 50 per cent. The new boats will be built by Pusey & Jones, Wilmington, Del., and will be 200 feet long by 55 feet wide.



Plan and Elevations of Gear, Showing, in Cross Sections, Details of the Floating Cylinder

The "Veri-Direct" Method of Handling L.C.L. Freight

To Prevent Wrong Loading, Wrong Way-Billing and Wrong Mailing of Way-Bills—Economy Proved

THE "VERI-DIRECT METHOD" of loading freight from freight houses into cars, which is here described has been in use in the Ohio Region of the Erie Railroad for over a year, and it has reduced the errors and losses due to wrong loading about 70 per cent as compared with former conditions. A very complete checking for errors is regularly made and the system is such that every bill of lading and every way bill must be accounted for. This method was introduced early in 1921 and is now in use at nine stations; and C. G. Johnson, superintendent of station sercvice, has given us a description of it substantially as follows:

From the arrival of a shipment of goods on the consignor's dray to the sending out of the way bill seven blank forms are required. These are:

1. Shipping order (transcript of bill of lading) on which are entered the "flag number" and location number of the car into which the freight is to be loaded; the veri-check progressive number, the rate, the extension and the waybill number.

2. A "veri-check ballot" which is filled out with a description of the car: the flag and location number, the veri-check number, the number of pieces in shipment, the number of pieces on the truck, the checker's number; also the stower's signature and a rubber stamp impression (put on by him) of the flag number.

3. Freight house veri-check record No. 1, one for each day. This shows the arbitrary progressive numbers of the ballots used.

4. Freight house veri-check record No. 2; one each day, showing the veri-check progressive number and the number of pieces of freight on each bill of lading. The difference between record No. 1 and record No. 2 is that No. 1 merely shows what ballots are made, while No. 2 shows, under the head of each car, what ballots were sent to that car.

5. Original waybill, one sheet 8½ in. x 11 in., for each shipment originating at the station.

6. Loading schedule (layout or spot sheet). See illustration. Copies of this are used by the flag clerk, the typist, the way-bill mailing clerk, and all concerned.

7. Combination invoice and veri-check record, used in the main office. This is sent out with the waybills; it is a waybill of waybills.

When the Shipper Comes

When the bills of lading are tendered, the representative of the shipper is sent to the central flagging office, where the bills of lading are routed, and the shipping order separated from the other portions. The clerk here stamps on the shipping order the flag number which indicates the car into which the freight is to be loaded, and the spot number showing where the car is to be found. (Permanent spot or location boards are placed opposite each line of cars, and flagboards within the cars).

The flag clerk has a master flag book showing all the stations on the Erie Railroad, in alphabetical arrangement, and those on connecting lines moving via Erie junctions, together with the flag number and symbol letter; and the shipping orders are "flagged" with this book as his guide.

The clerk places a number on each shipping order, by the use of a consecutive numbering machine, commencing with No. 1 on the first day of every week. This number is used as an identification of the shipment throughout. A record is made of the numbers of all shipping orders so that the shipper can be quickly identified in case a shipping order should be lost. For example: "Progressive Numbers 599 to 604—The May Company." This done, the bills of lading are returned to the shipper's representative and by him tendered to the receiving clerk for the handling of the goods. The check clerk receiving the freight arranges the shipping order portions in alphabetical order as to the destination stations, for convenient checking.

The Check Clerk, the Caller and the Stowman

A caller calls the consignee, the destination marks, the commodity, the case or bale number, or other identification marks shown on the package, and the checker checks against the shipping order.

The freight is placed on a truck and the checker calls the flag and location number, which has been written on the shipping order and the caller writes these numbers on the top of one of the packages. The two numbers are separated by a horizontal line, the flag number being shown above and the spot or location below; example:

$$\frac{66}{503}$$

The veri-check ballot, prepared by the check clerk, shows the flag number and the location number of the car; the veri-check progressive number, the number of pieces in the shipment and on that particular truck, and the checker's number. This ballot is handed to the caller, who deposits it in a receptacle on the side of the truck; and the truck is shoved to the opposite side of the freight house by the caller, and there dropped. Motor tractor or hand power then moves the truck to a point near the location board shown.

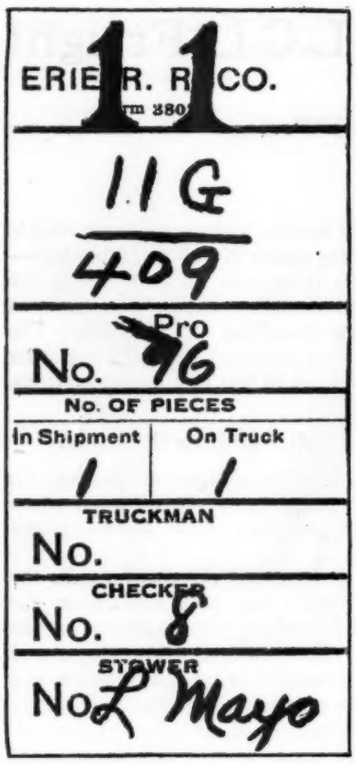
Regular stowmen are assigned to each line of cars, one stowman stowing four or five cars. These stowmen are responsible for the opening of the cars at the beginning of the day's business, the placing of the gang planks, the sweeping of the car floors, the pulling of the nails from the sides and floors of the cars, and the general preparation of cars for the receipt of freight. They are required to place the flag boards inside the car at the right of the door opposite the entrance to the car, in plain view from the platform.

No truckmen or other employes, except the stowmen, are allowed to enter the car except upon the authority of the foreman or assistant foreman.

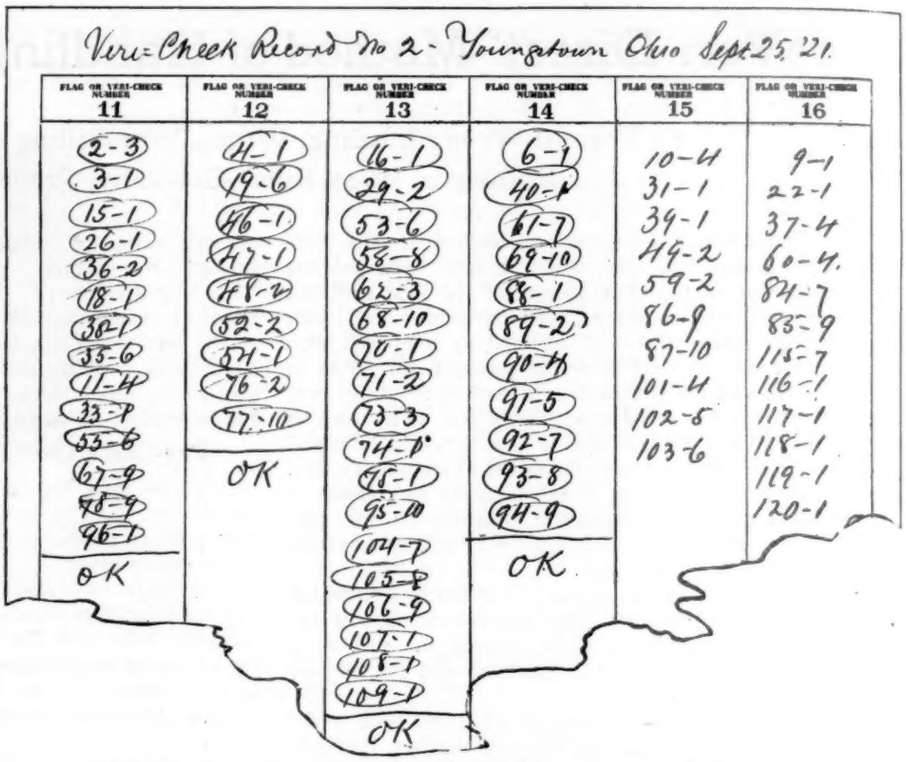
The stowman stows all of the freight. He notes the flag number as shown on one of the packages and moves the freight into the car according to this number. He then removes the veri-check ballot from the receptacle on the truck and compares the flag number on the ballot with the flag number on the flag board within the car. He then counts the number of pieces on the truck and compares that number with the number shown on the ballot. If the number of pieces on the truck is right the stowman places the ballot in the small pocket of his jacket and unloads the freight, observing the destination marks on the packages.

If he has any doubt about the loading he can refer to a book which he carries in his pocket. This book shows all the stations on the Erie Railroad for which freight may be loaded into a particular car. The cars are arranged in this book according to the flag number, in consecutive order. All destinations which may be loaded into a particular car are shown under the flag number of that car, in alphabetical arrangement.

Symbol letters are used for places off the Erie Railroad.



A Veri-Check Ballot



Copy of a Portion of Veri-Check Record No. 2, for September 25, 1921

This record is made in pencil on sheets 16 in. wide and 14 in. in height. This engraving shows a half of one sheet, reduced about two-thirds in width and height. The checking, indicated by a circle around the number, has been completed to the end of the fourth column, as shown by the "O. K."

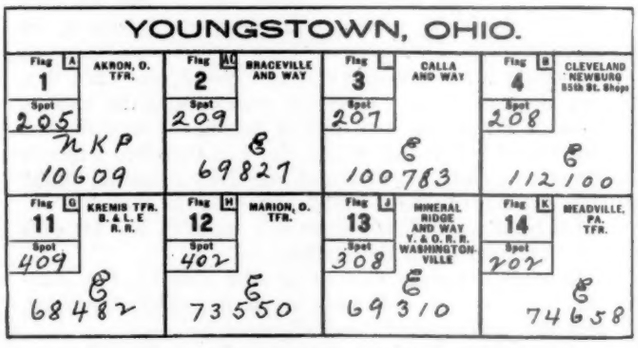
VERI-CHECK RECORD NO. 1—SEPTEMBER 25, 1921

Vericheck No. 6	*Vericheck No. 7*	*Vericheck No. 8*	*Vericheck No. 9*	*Vericheck No. 0*
(6)	(7)	(8)	(9)	(10)
(16)	(17)	(18)	(19)	(20)
(26)	(27)	(28)	(29)	(30)
(36)	37*	(38)	(39)	(40)
(46)	(47)	(48)	(49)	(50)
(56)	(57)	(58)	(59)	(60)
(66)	(67)	(68)	(69)	(70)
(76)	(77)	(78)	(79)	(80)
(86)	(87)	(88)	(89)	(90)
(96)	(97)	(98)	(99)	(100)
(106)	(107)	(108)	(109)	(110)
(116)	(117)	(118)	(119)	(120)

**Cancelled.*

The above is a reproduction of half (the right-hand half) of Veri-Check Record No. 1. It is reduced about one-half in width and height. Parentheses indicate that the number has been used this day. Assuming that 120 is the last number used, the clerk makes a notation on the sheet to that effect. It may be assumed that "37" represents a shipment to be held over until the next day.

In the next column is a transcript of an invoice covering 14 way bills. The invoice sheet is 5½ in. wide and has 44 numbered lines, being 17 in. in height. The carbon copy, retained in the sending office is on a wider sheet having three additional columns for (a) the veri-check number (b) the number of packages and (c) initial of the clerk who makes final check of ballots against way bills.


YOUNGSTOWN, OHIO.
Flag A 1 AKRON, O. TFR. Spot 205 NKP 10609
Flag AC 2 BRACEVILLE AND WAY Spot 209 E 69827
Flag 3 CALLA AND WAY Spot 207 E 100783
Flag B 4 CLEVELAND NEWBURG 55th St. Shops Spot 208 E 112100
Flag G 11 KREMIS TFR. B. & L. E. R. R. Spot 409 E 68482
Flag H 12 MARION, O. TFR. Spot 402 E 73550
Flag J 13 MINERAL RIDGE AND WAY Y. & O. R. R. WASHINGTONVILLE Spot 308 E 69310
Flag K 14 MEADVILLE, PA. TFR. Spot 207 E 74658

Part of a Daily Loading Schedule—Reduced

A daily loading Schedule for 40 cars fills a sheet 17 in. wide and 8 in. high Numbers 21, 31, etc., would come directly under No. 11; and 22, 32, etc., under No. 12.

ERIE RAILROAD COMPANY

INVOICE FOR WAY-BILLS FORWARDED

Youngstown, Ohio, September 26, 1921.

Flag No. 11
Agent at *Shenango, Pa.* Train No. 77
Waybills for *Erie* Car 68482 Enclosed herewith

Billed from	Billed to	Date	Number	Weight
Youngstown, O.	Bessemer	9-25	698	310
Youngstown, O.	Bessemer		699	400
Youngstown, O.	Bessemer		703	100
Youngstown, O.	Bessemer		711	115
Youngstown, O.	Bessemer		712	210
Youngstown, O.	Bessemer		714	100
Youngstown, O.	Bessemer		716	400
Youngstown, O.	Bessemer		717	625
Youngstown, O.	Bessemer		718	1,190
Niles, O.	Girard, Pa.		720	2,310
Youngstown, O.	Girard, Pa.		725	2,100
Struthers, O.	Girard, Pa.		729	4,310
Beaver, Pa.	Kremis, Pa.		741	990
Youngstown, O.	Kremis, Pa.		747	1,215
(Fourteen waybills)				14,375

For example "11" is the flag number for a car going to Shenango Junction, and 11X means that the destination is on the B. & L. E. to be transferred at Shenango Junction.

On the divider sheet which separates one car from another in the stowman's book, there is a note to the effect that for freight being loaded into this car for stations on connecting lines which do not appear in the alphabetical list, he must, in addition to flag and location number, have the authority of a symbol letter: and this letter is shown.

When the ballot shows only the flag number and the packages are destined to a station not shown in the stowman's book, they are rejected by him and the assistant foreman adjusts the irregularity.

As soon as the freight is deposited in the car by the stowman he removes the ballot from his pocket and stamps at the top of the ballot, the impression of the flag number of the car, by the use of a rubber stamp attached to the veri-check box. He then writes his name at the bottom of the ballot and deposits it in the veri-check box. Stowmen are prohibited from handling more than one shipment or one ballot (or set of ballots for one shipment) at one time.

Immediately after the completion of the check of the shipment by the check clerk at the receiving door, all portions of the bill of lading are compared, and stamped with the regulation time stamp, showing the hour and date of receipt; and he signs his full name on the original, in the space provided under the agent's printed name.

The time stamp used in receipting bills of lading is attached by a chain to the clothing of the check clerk, in order that unscrupulous persons may not have the opportunity to sign spurious bills of lading. The original and memorandum portions of the bill of lading are returned to the shipper's representative and the shipping order is placed on a spindle on the check clerk's desk. These are collected at intervals by a messenger and taken to the freight house veri-check desk in the central flagging office.

The Daily Records

At the beginning of the day's business the veri-check clerk prepares a sheet with numbers equal to the probable number of shipments that will be received on that day. This is veri-check sheet No. 1. These numbers are arranged for quick reference according to the last digit of the number, from "1" to "0"; i.e., number "495" is placed on the "5" column. These numbers are placed on the sheet with a consecutive numbering machine.

Immediately upon the receipt of shipping orders at the freight-house veri-check desk the numbers shown thereon are checked against the arbitrary numbers shown on the sheet, a circle being placed around the number to denote that that particular shipping order has been received at the desk. This is to insure that all shipping orders shall be accounted for.

The veri-check progressive numbers shown on the shipping orders, with the number of pieces of freight, are then recorded on the freight-house veri-check sheet No. 2, each number being entered under the flag number of the proper car. The shipping orders are then sent to the office for waybilling.

At intervals the veri-check ballots are collected by a messenger from the boxes in the cars. He examines the flag number as shown on the flag board and as stamped on the ballots by the stowmen, and if a ballot is found with the wrong number it is turned over to the assistant foreman for adjustment.

A rubber band is placed around each lot of ballots taken from each box, and the ballots are sent to the freight-house veri-check clerk where they are checked against veri-check sheet No. 2 to account for proper loading in car, a circle being placed around the numbers. The ballot is now sent to the main office veri-check desk.

Any omission found by the freight-house veri-check clerk such as the stowman leaving off his name, or failure to show impression of flag stamp, is immediately called to the attention of the assistant foreman. If a veri-check ballot is missing, record No. 2 immediately detects it. For example: if a veri-check number shown under the car on sheet No. 2 has not been circled, while the one below it has been circled, that is a danger signal to the clerk, and the shipping order or waybill is obtained from the waybilling office and an inspection made of the freight in the car to see if it is there. When found a ballot is made covering the shipment and that ballot, marked "duplicate," shows that the freight has been actually loaded in the car.

The checking of the arbitrary progressive numbers on the veri-check sheet number 1 will immediately detect any missing shipping order and reference is made to the record maintained by the flag clerk of the veri-check numbers on the shipping orders; and the shipper is immediately questioned as to the possible delivery of all portions of the bill of lading to him; and the shipping order is returned or a copy made and the record cleared.

If any shipment is held over and not loaded into the car, the shipping order is obtained and the veri-check number cancelled thereon; it is also cancelled on the sheet showing the arbitrary numbers. Every arbitrary veri-check number shown on the sheet must be accounted for at the end of the day's business, or cancelled on the sheet and an explanation made of the reason for the cancellation.

Every veri-check number and number of pieces in a shipment as shown under the flag number on veri-check sheet No. 2 must be accounted for before the cars are closed.

Way-billing and Mailing

Immediately upon receipt of the veri-check ballots in the main office they are placed in a case provided for them, in compartments numbered to correspond with the permanent loading schedule (layout or spot sheet), ready to be checked against the combination invoice and veri-check record.

There is a waybill distribution case with 100 compartments numbered according to the flag numbers on the cars. All waybills show the flag number of the car and they are distributed into the waybill distribution case according to these flag numbers. They are then written on the final veri-check record, which is a combination veri-check record and invoice of waybills. As soon as these waybills are entered on this form, the veri-check ballots are checked back against this record, and if the total number of pieces shown on the ballot or ballots agrees with the number of pieces shown against the record of the waybill, the main office veri-check clerk attests the fact by writing his initials in the verification column on the record; and he then files the ballots for future reference. If the number of pieces on waybill as shown by the record does not agree with number of pieces shown on the ballots the shipping order is secured; and if an error in waybilling has been made a new waybill is made. If there is a missing ballot, the freight-house veri-check record is inspected.

In waybilling freight the veri-check number, as taken from the shipping order, is shown on the waybill in a regularly assigned space. At the close of the day's business, after the ballots have been checked against the combination veri-check and invoice sheet and all items closed out, the main office veri-check clerk goes through each compartment of the waybill distribution case and first compares all of the flag numbers shown on the waybills with the number of the compartment. Then he refers to the permanent loading schedule and finds the initial and number of the car, compares it with the number shown on combination veri-check and invoice form, and then again goes through the waybills and compares the initial and number of the car shown thereon to see that they are all correct.

In addition, he counts the number of waybills and com-

pares them against the number of entries on invoice as shown by the numbered items thereon. He then attaches the invoice to the waybills, together with a copy of the non-revenue waybill upon which the car moves, and places the whole in the envelope, which has previously been prepared. This shows the flag number, the car number, initials, station from and date. If a way car, the original non-revenue waybill is attached to the other waybills.

Before mailing, the envelope is compared against the combination invoice and veri-check record of the car, the copy of the non-revenue waybill attached thereto, and against the permanent loading schedule to see if the car number and initial and the mailing destination of the car are correct.

A copy of the combination veri-check record and invoice is retained at the station as a permanent office record.

A Typical Shipment

In order that the reader may review this method of loading, free from details, we will follow a shipment from the shipper's dray through its various processes to the completion of the waybill and the mailing of that document.

Take a shipment of one box of patterns, 310 lb., shipped by the Carnegie Steel Co., Youngstown, Ohio, to the Edgar Thomson Foundry, Bessemer, Pa.

1. All parts of the bill of lading are presented at the central flagging office. Flag clerk enters (a) the routing (via Shenango & B. & L. E. R.R.); (b) flag number of car ("11G") and location number (409); (c) veri-check progressive number (96) put on with a consecutive numbering machine. He makes a record of the shipping order against the shipper's name, as before noted, and returns all parts of the bill of lading to the shipper's representative.

2. All portions of the bill of lading presented at the receiving door are then separated; and all shipping orders are arranged alphabetically according to destination stations. The caller calls the marks and unloads the freight from the dray and puts it in his truck. The checker checks against the shipping order and announces 11G-409, the flag and location of car, to the caller, who chalk-marks these numbers on one of the packages. The check clerk makes a ballot and hands it to the caller, who places it in the receptacle on the truck. The caller pushes the truck across the house to the car side. The checker stamps and signs all parts of the bill of lading; he returns the original and the memorandum to shipper's representative and hangs the shipping order portion on a hook on his desk.

3. This shipping order is picked up by a messenger and delivered to the freight-house veri-check desk. There it is checked on veri-check sheet No. 1 and the information shown on the order is recorded on sheet No. 2.

4. The shipping order is sent to the main office for billing.

5. The truck with freight thereon is moved by tractor or by hand to a point opposite location board "409."

6. The stowman notes the chalk mark and the flag number and moves the freight into car 11. He removes the ballot from the receptacle on the truck; compares flag number "11G" with flag board No. 11 and symbol G, shown on the board and on the box inside of the car. He counts the number of pieces on the truck and compares with the number shown on the ballot. He does not need to check destination, as the symbol letter "G" is shown. (If no symbol letter is shown the stowman unloads according to destination mark, referring to his book to find any destinations with which he is not familiar) and stamps the ballot with the flag number of the car; he signs his name on the ballot and deposits it in the box inside the car.

7. Messenger collects all ballots from box 11; compares rubber stamp impression number 11 with number 11 on the flag board; takes ballot to freight-house veri-check office where it is checked against record No. 2, which shows progressive number and number of pieces; the ballot is then sent to main office.

8. Shipping order is taken by the rate clerk and the rate is entered on it. He enters the waybill number (E-698) thereon with a consecutive numbering machine; extensions are made by the comptometer operator in blue pencil, and the waybill is made by a typist, who makes an exact copy of the written portion of the bill of lading. A shipping order when finally filed bears seven notations. For example, in the case of the box of patterns referred to:

1. The flag number 11G, and the spot number, 409, written in red pencil.
2. The progressive number, "96."
3. The routing, rubber stamped, "Route 5237 Shenango, B. & L. E."
4. The rate, in red ink, 79½.
5. The freight (310 x 79½), $2.46.
6. Total amount including war tax, $2.53; and the waybill clerk stamps on it the number of his waybill, 698.

SAMPLES OF ITEMS IN LOADING GUIDE, YOUNGSTOWN, O.

Flag No.	Station
5	Castile, N. Y.
16	Cattaraugus, N. Y.
6	Cedar Grove, N. J. (Ppd.).
3	Cement Works, O. (Ppd.).
7	Central Valley, N. Y.
7	Charlottsburg, N. J.
5	Cheektowaga, N. Y. (Ppd.).
12	Clanricarde, Ind. (Ppd.).
16	Clarion Jct., Pa. (Ppd.).
7	Clemo, Pa. (Ppd.).
4	Cleveland, Ohio.
6	Clifton, N. J.
7	Clifton, Pa.

YOUNGSTOWN, O.—FOREIGN

	Flag No. and symbol
Baltimore & Ohio R. R.:	
Akron, Ohio	1 A
Barberton, Ohio	1 A
Bessemer, Pa. (P. & L. E.)	26 T
Burbank, Ohio	1 A
Cleveland, Ohio	4 B
Dexter, Pa. (P. & L. E.)	26 T
Kent, Ohio	2 AC
Mt. Jewett, Pa.	16 L
Mansfield, Ohio	1 A
Bessemer & L. E. R. R.:	
Meadville, Pa.	14 K
Greenville, Pa.	23 Q
Shenango, Pa.	11 G
Buff., Roch. & Pitts. R. R.	
Bradford, Pa.	16 L
Brockwayville, Pa.	16 L
Carrollton, N. Y.	16 L

A LEAF FROM A STOWMAN'S BOOK. YOUNGSTOWN, O.—FLAG NO. 6

Allwood, N. J.
Arlington, N. J.
Athenia, N. J.
Atlantic Terminal, N. Y.
Atlantic Term., Brooklyn, N. Y.
Awosting, N. Y.
Babbitt, N. J.
Baltic Term., Brooklyn, N. Y.
Bardonia, N. Y.
Belleville, N. J.
Bellwood Park, N. J.
Bloomfield, N. J.
Bloomfield Ave., N. J.
Bloomingdale, N. J.
Boardville, N. J.
Bogota, N. J.
Brighton Ave., N. J.
Brooklyn, N. Y.
Brooklyn E. D. Term, N. Y.
Bush Term., Brooklyn, N. Y.
Butler, N. J.
Bush Dock, N. Y.
Caldwell, N. J.
Campgaw, N. J.
Carlstadt, N. J.
Carlton Hill, N. J.
Carlton Park, N. J.
Cedar Grove, N. J.
Clifton, N. J.
Closter, N. J.
Cooper, N. J.
Cresskill, N. J.

9. The waybill is sent to main office mailing desk and there placed in compartment number 11, faced up.

10. The mail clerk transcribes the waybill on a combination invoice and veri-check record (see illustration); then checks the ballot number against the item on the record and returns both the waybill and record to compartment number 11, faced down.

11. The mail clerk counts the waybills and compares the number of each bill with the number shown on the invoice; then he checks all flag numbers shown on waybills to see if they agree with the compartment number; obtains the car number from the loading schedule and checks the car numbers on all waybills; addresses the envelope; attaches invoice and copy of non-revenue waybill to other waybills; compares address on envelope with destination of car as shown on loading schedule, and sends to mail room for mailing. (Loading schedule shows that number 11 car is Erie 68482 and destination Kremis Transfer, B & L E.)

Satisfactory Economy

Mr. Johnson informs us that at a station or transfer handling from 900 to 1,200 consignments a day the additional cost necessary for the operation of the "veri-direct" loading method will not exceed $200 a month; and he declares that this amount is insignificant compared with the saving made by the use of the method in the elimination of loss and

damage claims. He will be glad at any time to meet representatives of railroads who may be interested, at one of the large stations on the Erie and explain the operation.

The method is in use at the following stations: Jamestown, N. Y.; Meadville, Pa.; Youngstown, Ohio; Cleveland, Ohio; Akron, Ohio; Ashland, Ohio; Mansfield, Ohio; Sharon, Pa.; Warren, Ohio.

Freight Transferred

In the handling of outbound freight all through waybills received at the freight-house with goods from connecting railroads are treated the same as bills of lading received direct from consignors. Each such waybill is rubber-stamped when the goods are transferred, showing station and date and car loaded into; and it also has a veri-check number, put on with the numbering machine, the same as though it were a shipping order.

Each freight station that transfers freight from one car to another keeps a loose-leaf record showing all necessary details of every shipment. The record of a given inbound car at Youngstown, for example, shows not only the freight transferred but also all freight for Youngstown proper, with any necessary notations as to condition of goods found in bad order.

Clerks Demand Large Wage Increases

Railroad Labor Board Asked to Restore Rates of Pay Received Under Its Decision No. 2

ANOTHER DEMAND for large wage increases was placed before the Railroad Labor Board when representatives of the clerical employees on approximately 50 carriers appeared before that body on November 23, 24 and 25. In general their requests were for the restoration of the rates of pay in effect under the Board's Decision No. 2, in other words the restoration of the highest rates of pay ever received by these employees. According to their testimony, the increases requested, if granted, would add $5,895,000 to the monthly payroll for clerks (based on the August, 1922 figures) and $1,330,000 to the monthly payroll for freight handlers, a total monthly increase of $7,225,000.

A new argument in favor of wage increases was included in the employees' presentation when, in dealing with the ability of the carriers to pay the increased rates requested, they openly made the charge that "the railroads have persistently concealed the true measure of prosperity which they enjoyed by the grossly misleading practice of carrying excessive charges to maintenance." This "method of concealing profits has long been an integral part of railway financial policy" and is "common knowledge," they continued. "The extent to which it has been indulged and the full significance of that indulgence has been clearly recognized and forcibly driven home by only one prominent financial writer, Thomas Gibson, who in recent years has devoted a large measure of his time to extended analysis of this factor in the railroad income statement and has repeatedly urged his clients—the holders of railroad securities—to realize the influence which overmaintenance exerts in depressing railroad net earnings below their actual proper level."

Numerous "weekly market letters" written by this man were quoted in support of their position, but upon cross-examination none of the employees' representatives could definitely identify the author.

In concluding his argument for a wage advance, E. H. Fitzgerald, president of the Brotherhood of Railway & Steamship Clerks, Freight Handlers, Station & Express Employees, said:

> We have proven:
> (1) That inequalities in the wage rates paid to freight handlers in certain localities have worked an injustice and merit immediate action by the Board.
> (2) That the cost of a decent standard of living in the United States today is far above the wages received by the classes of employees we represent.
> (3) That the standard of living of these workers has fallen and unless the Board acts now, the increases in living costs which are being daily reported will inevitably operate to further depress the standards of living of these railway employees.
> (4) That business conditions in general, and the condition of the railroads in particular, are such that an increase in the wage rates can be easily paid from railway earnings. Not only is the financial condition of the railways now very favtroble, but every indication points to the conclusion that the railways will profit even more liberally in the near future. We have shown in this connection that the granting of punitive overtime rates for all time worked in excess of eight hours a day or 48 hours a week is under existing conditions not only just and reasonable but an absolute necessity.
> (5) That the wages of employees in outside industries have increased very rapidly in the general upward movement that has taken place in the last six months. We have shown that the wages of railway trainmen have been continued at the level prevailing after July 1, 1921. We have shown that individual railways, acting in agreement with their employees, have increased the rates under Decision 1074 in their application to the employees we represent.

In regard to the alleged inequalities, the employees' representatives contended that freight handlers in the larger terminals are suffering from a maladjustment originating in Supplement 7 to General Order 27 and petitioned the Board to restore the differentials formerly existing between clerks and freight handlers in freighthouses.

The "relation between wages and the cost of living" factor enumerated in the Transportation Act as one of the principles to be considered in fixing wages, is inseparably connected with the budget method and the theory of the "living wage," they argued. The minimum cost of living level, they added, averaged more than $1,960 throughout the country, whereas the yearly wages of the classes of employees involved in this dispute ranged between $1,730 for "Class A" clerks and $932 for common labor. In this connection, they also went into the subject of "real wages," basing their conclusions upon a comparison of wages and retail prices of food between 1895 and 1922. This comparison purported to show that the wages of station employees now, measured by their purchasing power, are seven per cent less and the wages of clerks eight per cent less than they were in 1895.

A great deal of the employees' testimony was devoted to an attempt to prove that the carriers' financial difficulties are now over and that they are able to pay the higher wage scale requested. It was in connection with these contentions that the employees introduced their charges of "concealed profits in the form of overmaintenance."

Employees' Testimony Answered by E. J. McClees

The reply of the eastern carriers was presented by E. J. McClees, secretary of the Bureau of Information of the Eastern Railways, who repeatedly called attention to the fact that almost all of the arguments advanced by the employees have been subjects of extended hearings and in many cases

of decisions by the Board. This was particularly true, he pointed out, in regard to the men's demands for punitive overtime and various changes in their working rules.

For instance, the changes in rules requested by the employees should be declined, Mr. McClees said, because: (1), they are merely repetitions of requests previously filed with the Board and upon which exhaustive hearings were held in 1920 and 1921; (2), the railroad testimony submitted at that time clearly showed the drastic and restrictive nature of the proposed rules; and (3), there has been no change in the conditions affecting the employees which would justify a reconsideration of these questions.

Referring to the comparison of wages and retail food costs from 1895 to 1922, Mr. McClees pointed out the "impossibility of establishing any earnings of these classes of railway employees from the Interstate Commerce Commission's reports for these past periods" and also the changes which the Department of Labor has made in the food item at various times between 1900 and 1913 all of which tend to nullify the comparison.

"We feel that there is only one conclusion to be drawn from the general statement on behalf of the employees," Mr. McClees continued, "and that is set forth in the statement made by committees on practically every eastern railroad which is represented in this hearing, namely, that it is the position of the organization that Decisions 147 and 1074 of the Labor Board did not recognize conditions as they existed and therefore were improper and unjust; in other words, that the Labor Board erred when it ordered these reductions."

Taking up the contentions of the employees, namely, first that Decisions 147 and 1074 were improper and unjust, second, that there is an upward trend in the cost of living, third, that the present wages of the employees involved are not sufficient to maintain an average family in health and decency, and fourth, that there have been increases in wages in other industries since Decision 1074 was rendered, Mr. McClees said in part:

"(1) Our exhibits clearly indicate that the treatment which employees have received in the way of adjustment is a complete answer to the claims of the organization concerning inadequate or improper treatment, and demonstrates that all the classes of employees involved in the present hearing have received fair treatment whether viewed from the standpoint of actual increases or upon the basis of reduced purchasing power of money.

"It will be noted for instance that the average hourly rate for clerks in 1915 for the railroads indicated was 27 cents; in October, 1917, 30.7 cents; June, 1921, 62.7 cents; June, 1922, 56.4 cents, and at present 53.3 cents; that the clerks involved are at present enjoying an increase over 1915 of 97.4 per cent in their rates and, after making allowance for the reduced purchasing power of the dollar, they are 18.7 per cent better off than they were in 1915. Using 1917 as a base they are 48.6 per cent better off now than in 1917.

"(2) As to the claims of the representatives of the employees concerning the upward trend in the cost of living, the latest information available completely contradicts the claims of the employees. The Department of Labor bulletin shows that for July, 1922, the index number of the cost of living was 166.9 based on 1914, compared with 166.3 for September, 1922, September being the latest figure available, and 174.3 for December, 1921. Such fluctuations as have taken place since last spring are not sufficiently pronounced to justify the reconsideration of the wage scales upon that factor.

"(3) As to the employees' contention that the present wages do not yield a reasonable living wage, we believe that in view of the conclusions reached by the Board in its recent decision in the maintenance of way case no further argument need be made by the railroads on that subject.

"(4) The best information available shows that nothing approaching a general increase in wages has taken place in other industries. Such changes as have taken place have been spotted and largely confined to associated industries. A summary of an investigation made by the individual railroads as to changes which have taken place in the wage scale of clerical forces in other industries, shows that 83 per cent of 733 firms canvassed have made no changes in the wage scales of their 31,957 clerical employees, that 85.8 per cent of the employees have had no increase or decrease while 15.7 per cent of the firms made increases applying to 14.2 per cent of the employees. It will be observed that nothing resembling a general adjustment has taken place, in increases which have been granted it is evident that they must have been based upon the merits of the individual cases."

Several presentations were made on behalf of the individual carriers and Dr. C. P. Neill and J. W. Higgins presented brief statements outlining the position of the southeastern and western carriers, respectively, the bulk of the testimony on behalf of the latter group was given by representatives of the individual lines involved.

Representatives of the Pennsylvania and the Mobile & Ohio protested their inclusion in the controversy but no ruling was made by the Board on this point. The hearings ended on November 25.

An Automatic Substation for the New York Central

THE NEW YORK CENTRAL Railroad has contracted with the General Electric Company for an automatic substation installation to be used on its electrified division. The new substation, which is the first to be installed on an electrified steam road, will be located beneath the elevated tracks at One Hundred and Tenth street and Park avenue, New York, near the point where they emerge from the Park avenue terminal. While the equipment furnished will provide for full automatic operation, the operator at Mott Haven substation No. 2, about two miles distant, will have the new station under his supervision through pilot wires providing for remote control. This equipment offers an interesting and economical solution to some of the problems of train operation at points where the growth of traffic develops load centers which did not exist at the time of the original installation.

The equipment will consist of a 2,000-kilowatt motor-generator set operated directly from the 11,000-volt transmission line and with the generator supplying power to the 660-volt third-rail system.

The set may be floated on the line all day or may be closed down during the periods of light traffic at the discretion of the operator at the Mott Haven Junction substation. To start the station, he simply operates a control switch and the automatic control in the new substation takes care of starting the motor-generator set and bringing it on to the line. An operator in the station at Mott Haven may also follow the output of the machine and its load conditions at any time of the day. From his knowledge of train movements he is in a position to know when the set may be unnecessary and the indicating equipment on his meter panel gives an additional check on the line load.

In the event of a service interruption due to failure of the high tension supply, the automatic station will of itself shut down and be ready to come onto the line again with the resumption of service from the power station.

The automatic station control is laid out so as to present the characteristics of a constant current generator. The control can be adjusted so that the generator will supply continuously any value of current below the rated output for so long as the operator may anticipate the concentration of load or for such a period as is possible without overheating.

Southern Pacific-Central Pacific Hearing

WASHINGTON, D. C.

THE HEARING before Commissioners Meyer and Potter of the Interstate Commerce Commission at Washington on the application of the Southern Pacific for authority to retain its control of the Central Pacific by lease and stock ownership was continued this week. Following the presentation of testimony by officers of the Southern Pacific, a large amount of testimony was given by representatives of western shippers and of state commissions who have intervened in the case to favor or oppose the Southern Pacific's application. Those who urged the commission to approve the Southern Pacific's application did so largely on the ground that they preferred to maintain the Southern Pacific as a strong railroad system, which they looked upon as a California institution, rather than to have additional competition, while many of them also feared that the service would be impaired by a separation of the Central Pacific from the Southern Pacific. Others who favored the separation took the position that if separated from the Southern Pacific, the Central Pacific would display more interest in the development of the intermountain territory. The Union Pacific witnesses are to be heard later.

L. J. Spence, director of traffic of the Southern Pacific, was cross-examined at length by H. A. Scandrett, commerce counsel of the Union Pacific, regarding the extent of preferential solicitation by the Southern Pacific of traffic over its southern routes. In reply to questions, Mr. Spence said that while the Southern Pacific was under Union Pacific control the agents were supposed to solicit business through the gateway which yielded the longest haul to the system lines, but that after the separation he had substituted specific directions based on the definite geographical line which he had described in his original statement and that in what he called Atlantic-Gulf territory the Southern Pacific agents were instructed to solicit preferentially via the southern routes. In the territory north of that line they solicited preferentially via the Ogden route. He denied that it was the practice to solicit for the southern routes in the territory north of the line. In other words, he said, the Southern Pacific undertook to use the route by which it could most successfully get its share of the business. He admitted that under this policy the Southern Pacific tried to get freight from Cincinnati via the southern route, although the distance was somewhat greater than via Ogden because the southern route was available for this purpose and by it the Southern Pacific would receive a greater revenue, but, he said, the company regarded the Omaha route as an indispensable route by which to solicit business as against the Santa Fe and other lines and that the Union Pacific is indebted to its organization for many a car via Ogden when the Southern Pacific could not get it the other way. Mr. Scandrett inquired whether an independent Central Pacific would view the Cincinnati traffic in the same way and Mr. Spence admitted it would not. When Mr. Scandrett asked if this does not indicate that the Southern Pacific competes against itself, Mr. Spence replied that, in his opinion, the railroad having a long haul by one route and a short haul by another route necessarily competes against itself. He denied that the Sunset-Gulf route is a material competitor against the Ogden route, on the ground that because of canal competition the transcontinental traffic does not amount to much. The canal competition, he said, now has three times the force it had when the Southern Pacific-Central Pacific case was submitted to the court. He also denied that the Southern Pacific had made lower rates over the Sunset-Gulf route to take business away from the Ogden route, asserting that the desire was not so much to make a differential as against the rail lines as for the purpose of meeting the canal competition. Mr. Spence said that when the policy of solicitation was adopted after the separation of the Central Pacific and the Southern Pacific, he had informed Judge Lovett, chairman of the Union Pacific, at his request, and that Judge Lovett had said it was entirely satisfactory.

Commissioner Potter asked if the Southern Pacific in drawing the line had attempted to be impartial. Mr. Spence said that it had drawn the line with reference to the points at which it could make its solicitation effective. Fred H. Wood, counsel for the Southern Pacific, had the witness repeat his original testimony showing that the traffic which moved via El Paso last year which might have gone via Ogden amounted to less than 83,000 tons and that the same policy of solicitation had put 316,000 tons of freight over the Central Pacific which would not have moved that way if the Southern Pacific had not solicited it. Commissioner Potter inquired how much tonnage the Southern Pacific would lose if the line from Ogden to San Francisco alone were taken from the Southern Pacific. The witness said he had made no estimates along that line.

In connection with the cross-examination, Mr. Scandrett recalled testimony by William Sproule, president of the Southern Pacific, before the Railroad Commission of California in 1913 to the effect that the separation of the Central Pacific from the Southern Pacific would be of great benefit to the shippers and the public of California, that additional railroads bringing new competition were always of benefit to a community, and that there would be no advantage in rates and no inconvenience to the public to result from such a separation.

F. L. Burckhalter, assistant general manager of the Southern Pacific, was cross-examined for an entire day by Mr. Scandrett and by H. W. Clark, general counsel of the Union Pacific, regarding the operating conditions which would result from a separation. Mr. Clark attempted to show by the questioning that existing routes need not be disrupted by a separation of the ownership and that the public would not be seriously affected in any way because arrangements could easily be made for joint use or running rights over the trackage so that very little change in present methods of operation need result. He insisted that the Southern Pacific's objection to such joint use was based on questions of economy from the Southern Pacific standpoint, while as to several lines, Mr. Burckhalter said that the Southern Pacific could not afford to enter into any arrangements for joint use because it had lines of its own serving practically the same traffic. "We do not assume that all disruption of traffic is against the public interest," Mr. Clark said, "although that is evidently the case of the Southern Pacific in this hearing. We propose to show that a disruption can be made that will not particularly injure the present service and will in the long run afford better service." With a large map of the lines Mr. Clark had Mr. Burckhalter point out the various routes and cross-hatch with a red pencil the lines over which trains of both railroads could be run without, as he said, much change in methods of operation. Mr. Burckhalter would not admit that traffic would continue to move in the same way in the event of a separation, but Mr. Clark insisted that this merely meant that he thought it would not be economical for the Southern Pacific to enter any joint use arrangements.

Athol McBean, vice-chairman of the California Shippers' Committee, which he said represented the shippers of 90 per cent of the freight tonnage of California, whose freight bill amounts to $250,000,000 a year, appeared in support of the Southern Pacific's application. He said the shippers of California and the Pacific Coast feel that the Southern Pacific is essentially a California institution and dependent to a large extent upon the growth and development of that territory for its prosperity, and that they preferred a strong railroad organization to the competition of additional lines. They also saw in the Southern Pacific Company an institu-

tion which looks from the West east rather than from the East west. The opening of the Panama Canal, he said, and the resultant dwindling of the so-called transcontinental business have accentuated this situation and the freight paying public is virtually unanimous against dismemberment of the Southern Pacific System, because they believe that from such a local institution the state will receive its fullest measure of co-operation. He took the position that the substitution of competitive operation, were the Central Pacific lines not operated by the Southern Pacific, would impair service and substitute higher rates for a two-company haul than are now charged for a single-line haul. Under cross-examination he said it was a good thing for the Santa Fe System to go into northern California and that the competition of the Western Pacific was welcomed, but he declined to admit that the operation of the Central Pacific as an independent system would be of benefit. "We would not want so much competition that it would break down the good service we now have," he said. "There are too many transcontinental lines into Oregon and Washington now. We want one strong road rather than two weak ones. If the Union Pacific wants to build into California, we will go with you, but we don't want you to come in and break down the one strong system we have." He was asked if joint use of the lines would not meet the difficulties as to service, but he insisted that better service could be obtained under unified management by the Southern Pacific.

Grant E. Halderman, chairman of the Public Utilities Commission of Colorado, opposed the Southern Pacific application on the ground that control of the Central Pacific by the Southern Pacific would "perpetuate intolerable conditions now existing" and would be greatly detrimental to the state of Colorado. The interests of the public in Colorado, he said, as well as in the intermountain region, demand that the decision of the Supreme Court be speedily and completely carried into effect and Colorado sentiment is a unit in urging that this course be pursued. He presented resolutions from several organizations in the state favoring a separation of the Central Pacific from the Southern Pacific on the ground that the Southern Pacific has diverted to its southern route a large amount of traffic which would otherwise pass through Colorado and thereby add to the efficiency of the railroads serving that state.

Mr. Wood asked the witness if he or the senators and others from Colorado who have been sending telegrams to public officials in Washington urging a separation of the Central Pacific, on the theory that it would increase the tonnage moving via Colorado lines, had made any investigation of the amount of tonnage that would be affected. The witness said that he "knew nothing about the traffic game" and that he had not heard any of the others discuss the amount of traffic involved. Mr. Wood then asked if he thought an increase of less than 100,000 tons through the Ogden gateway, or less than one per cent of the tonnage of the Union Pacific, would have any very substantial influence one way or the other. The witness admitted that if that were the amount he would not think it was a matter of great importance to the people of Colorado whether the tonnage moved via Ogden or through El Paso, although he thought it might be of some advantage to the proposed tunnel on the Moffat road. Mr. Wood then asked if he knew whether the efforts of the Union Pacific are directed more largely to putting its transcontinental business through Omaha, where it does not pass through Colorado, or through the Kansas City line, where it does pass through Colorado. The witness said that without knowing much about it, it would largely be determined by the origin of the tonnage and that much of it would naturally go through Omaha. Mr. Wood then asked questions to bring out that if the Union Pacific should acquire control of the Central Pacific and close the use of the Central Pacific as a connection of the Denver & Rio Grande, the traffic over the D. & R. G. through Colorado would be likely to be reduced.

H. W. Prickett, testifying on behalf of the state of Utah and various chambers of commerce in that state, favored the retention of the Central Pacific by the Southern Pacific. He said it is the unanimous opinion of those he represents that the future development of the state will be best served by continued competition between the Central Pacific and the Southern Pacific. He feared that a separation would weaken the Central Pacific and that the state would have less competition than it now has with two lines from Utah and California. He testified that Vice-President E. E. Calvin of the Union Pacific had told him that if the Central Pacific was separated from the Southern Pacific there would be no question but that the Union Pacific would acquire it. In his opinion, the amount of traffic moving through the state that would be affected is of comparatively small significance, but that if the Union Pacific or interests friendly to it controlled the Central Pacific they would have a practical monopoly and would advance rates. Other business men of Utah, California and Oregon gave similar testimony. F. A. Summers of San Francisco, who has a large grain warehouse at Port Costa, said he feared that if the Central Pacific were separated it would set up a grain terminal of its own which would deprive Port Costa of a great part of the business it now receives. A number of representatives of the Willamette Valley lumber interests also testified in favor of the Southern Pacific application, saying that control by the Southern Pacific gives competition with the Union Pacific and that joint operation of the Central Pacific by the Union Pacific and the Central Pacific would result in impairment of service.

Representative F. W. Mondell of Wyoming testified in favor of the complete separation of the Central Pacific from the Southern Pacific, saying that the national interest demands that the transcontinental line represented by the Union Pacific and the Central Pacific should be operated by one system. With the Central Pacific under management and control whole-heartedly favorable to the utilization and development of the transcontinental system of which it was intended to be and is a part, he said, the service now rendered in and to Wyoming would be extended, enlarged and improved. Branch and feeder lines would be built and with them would come increased population and a general improvement of conditions in the state. He said he had no quarrel with the Southern Pacific officials, but they cannot be expected and should not be asked to serve two interests.

George E. Erb, president of the Idaho Public Utilities Commission, also opposed the Southern Pacific application, as did C. L. Draper, chairman of the Public Service Commission of Wyoming. J. F. Shaughnessy, chairman of the Nevada commission, presented an intervening petition in support of the Southern Pacific application, saying that a separation leaving the Central Pacific unattached to a strong operating company would cripple it. He said he did not wish to commit the state as to the final disposition which should be made of the property. He also read a letter from another member of the Nevada commission which took the position that it should remain neutral until the federal commission has completed its investigation on the ground that the state commission has held no hearings and the sentiment of the shippers has been represented only by a series of ex parte petitions in about equal number secured by representatives of the Southern Pacific or the Union Pacific.

Richard Sachse, chief engineer of the California Railroad Commission, testified at great length in support of the Southern Pacific application, asserting that a separation of the properties and an attempt to operate over the Central Pacific lines jointly would result in a great decrease in efficiency. He occupied the stand for nearly a day and a half and was cross-examined in detail by Mr. Scandrett.

General News Department

The United States Supreme Court will hear arguments on January 8 in the injunction suit of the Pennsylvania Railroad against the Railroad Labor Board.

Examiners Mullen and Borland of the Interstate Commerce Commission will resume hearings at Washington on December 4, in the general air brake investigation.

The New York Central Lines' Train Control Committee witnessed a preliminary test of the Clifford Automatic Train Control system which was conducted on the Erie at Port Jervis, N. Y., on November 28. The test was made at the request of this Committee and proved satisfactory.

The Senate on November 24 in committee of the whole adopted an amendment to the Liberian loan resolution providing for an appropriation of $170,100 for 35 additional locomotive inspectors for the Interstate Commerce Commission, but on November 27 the Senate voted to recommit the resolution to the finance committee.

Renewed complaint about the condition of railroad equipment as a result of the shop strike was made to President Harding on November 25 by William H. Johnston, president of the International Association of Machinists, and B. M. Jewell, president of the Railway Employees Department of the American Federation of Labor.

They also protested to the President that several railroads were still violating orders of the Railroad Labor Board regarding the contracting out of shop work.

The American Short Line Railroad Association announces the removal of the Consolidated Purchasing Agency from Washington to Chicago, effective December 1. It is also completing plans for a finance corporation, through which gasoline passenger motor cars may be acquired by member lines and others under a lease purchase contract. It is believed that this will be a great help to a large number of railroad companies who have otherwise found difficulty in financing the purchase of motor equipment on this basis.

Pierce Butler of the law firm of Howe, Butler & Mitchell of St. Paul, Minn., has been nominated by the President as an associate justice of the Supreme Court of the United States succeeding William R. Day, resigned. Mr. Butler was formerly general attorney of the Chicago, St. Paul, Minneapolis & Omaha and later counsel for the western group of the Presidents' Conference Committee on Valuation. Representatives of the radical and labor elements in the Senate have announced their intention of opposing the confirmation of the appointment by the Senate.

On Tuesday the Senate Judiciary Committee voted to report favorably to the Senate on the nomination.

Payments for loss and damage of freight by the New York, New Haven & Hartford in the month of September amounted to $39,690, which is a large sum of money; but it is 75 per cent less than the sum paid in September, 1921. Bills paid for losses of entire packages decreased 95 per cent. The percentage of total damage payments to gross freight revenue was eight-tenths of one per cent, as compared with 3.7 per cent in September, 1921. The record for September was not so very exceptional, the payments for the nine months of 1922 having been 62 per cent less than in the same period of 1921.

Employees of the Pennsylvania Railroad have bought, through the Mutual Beneficial Association, 27,000 shares of the stock of the railroad company, and about 1,500 shares were thus bought by employees during one week recently. J. K. Linn, treasurer of the Mutual Beneficial Association, Philadelphia, through whom the purchases are made, says that he recently received from one limited territory nearly 1,000 names of employees desiring to buy stock, most of them ordering a single share each. The stock is bought in the open market and the Mutual Beneficial Association keeps the shares for a time so as to allow the buyers to pay in installments.

The Northern Pacific has announced a new style of land contract. Lands are to be sold on terms which will provide for the spreading of payments over a period of 19 years. One-tenth of the consideration is to be paid in cash and the balance, drawing simple interest at six per cent, is to be amortized over the above period. Under the new plans, purchasers must reside on or within 10 miles of the premises or move thereto within six months, and must maintain this residence for five years. They must utilize the land for farming or stock raising and within one year, place upon the premises improvements of a value equal to five per cent of the purchase price; and, the same in each of the next three years.

The track elevation committee of the City Council of Chicago has given the Pennsylvania and the Baltimore & Ohio ten days to resume work on the elevation of their tracks at Garfield boulevard near Leavitt street, Chicago, in compliance with the provisions of an ordinance of 1921. The roads were notified that unless they started the work within this period, the city would start it and charge the cost to the railroads. If the order of the committee is not observed, the committee will request that policemen be stationed at the grade crossing to stop all trains. It is said that notices will also be sent to the Chicago & Western Indiana, the Baltimore & Ohio, the Monon and the Belt Railway to elevate their tracks at 103rd street and Harvard street and 116th street and Michigan boulevard.

Senator G. W. Pepper, of Pennsylvania, to whom the representatives of the American Federation of Labor, speaking for former Pennsylvania Railroad shopmen, have appealed for aid, had a long conference last week with vice-president W. W. Atterbury, and on Monday, November 27, at the invitation of General Atterbury, conferred at his office in Philadelphia with chairmen of the new associations of shopmen which have been organized since the strike, representatives of the former shopmen also taking part. This tripartite conference on Monday, after three hours' deliberation, was adjourned to a date to be selected by Senator Pepper. Reporting this conference, General Atterbury reiterates the determination of the railroad company to continue its present arrangement with its shopmen, unless the shopmen themselves desire a change; and says that he asked their representatives to confer with the Senator because, "I simply wanted them to share with me the burden of convincing people that what we have jointly set up on this railroad is fair and mutually satisfactory."

St. Louis Southwestern to Spend $5,000,000

The St. Louis-Southwestern has announced a $5,000,000 improvement program including the purchase of 500 box cars, 500 automobile cars and 200 convertible cars; also the reballasting during the next three years the entire line from Illmo, Mo., to Texarkana, Tex., and replacing 75 lb. rail to 85 lb. rail on about 100 miles of main line and the conversion of locomotives used in Texas from coal to oil burners. The new equipment purchased will amount to $3,000,000.

Foreign Trade Council Extends Trade Adviser Service

The National Foreign Trade Council has announced that the trade adviser service, which has been a feature of the foreign trade conventions, has been made a year-round service instead of only a few days each year during the progress of the convention. The trade advisers are appointed from

the country's experts in the various lines of foreign trade and their advice on the particular problems of individual manufacturers and exporters is offered free of charge. Further details may be obtained from the secretary of the National Foreign Trade Council at 1 Hanover Square, New York.

The Moffat Tunnel

The Colorado Supreme Court has handed down a unanimous decision upholding the constitutionality of the Moffat Tunnel Act, which provides for the financing of a six-mile tunnel through the Continental Divide on the line of the Denver & Salt Lake by assessment on the property included in an improvement district served by this railway. This decision was the result of a friendly suit to test the validity of the bonds which it is proposed to issue to finance this work. This project was described in the *Railway Age* of September 23, 1922, page 571.

A Spectacular Wreck

In the derailment of a freight train near Cabeza, New Mexico, on the El Paso & Southwestern on October 25, at about 7 p. m., 36 cars of coal (of a train of 43 cars) were thrown off the track because of excessive speed, on a steep descending grade, and the wreck was piled up in a space only 325 ft. long. Only two trucks in this wreck were found in condition for use in moving a car to the nearest shops. One engineman and one brakeman were killed and two other employees were injured; and the property loss was over $92,000.

There were two locomotives at the head of the train, but one of these was dead. The engineman of the train lost control of the air brakes, and when the speed rose to 67 miles an hour (as indicated by the speed indicator) some of the cars in the front of the train left the track at a curve of eight degrees; and as before stated, these cars piled up, in a great wreck, the whole of the train except seven cars at the rear. Two views of the wreck are shown below.

A Sudden Stop on a Two Per Cent Grade—Two Trainmen Killed, Two Injured

Pennsylvania Starts Clearing Way for Pittsburgh Improvements

In an endeavor to clear the way for a widespread future improvement program covering the passenger station and freight station facilities at Pittsburgh, Pa., an ordinance has been submitted by the Pennsylvania Railroad to the City Council. The agreement covers a relocation of Liberty avenue, which adjoins the station, between Eleventh and Seventeenth streets, the probable construction of a large freight station on the north side of Forbes street, a tunnel under Forbes street, the widening of the present Grant Hill tunnel, the relocation of Grant street between Seventh and Liberty avenues, a change in track alinement leading to the Allegheny river crossing and a widening of Cherry way. The present Grant street freight house will be vacated under this plan making the space available for a proposed new post office. The relocation of Liberty avenue with the attendant closing of the old avenue will make available for the railroad a large area for future expansion of station and track facilities to the north.

Subjects for A. S. M. E. Annual Meeting

Many topics of interest to the railroads will be discussed during the Annual Meeting of the American Society of Mechanical Engineers to be held at the Engineering Societies' building, 29 West Thirty-ninth street, New York, December 4-7, 1922. On Tuesday morning, the Management Section will discuss several subjects, including the Installation of Management Methods and Measurement of Managerial Ability. On Tuesday afternoon a session on Training for the Industries will take up reports on Extension and Correspondence Schools, Schools for Apprentices and Shop Training and Industrial Education as Represented in Schools.

The Railroad Session on Wednesday morning will discuss Steam Distribution in the Locomotive, Stresses in Locomotive Frames and Mechanical Drafting of Locomotives. On Thursday morning a session will be held on Power and Safety Engineering. On Thursday afternoon the Forest Products Division will meet. There will also be held during the week sessions on Machine Shops, Material Handling, Research, Standardization and Stokers. A feature of special interest will be the joint session Wednesday evening, December 6, with the American Economic Association at which E. M. Herr, president of the Westinghouse Electric & Manufacturing Company, will speak on The Human Element in Industry, and Wesley C. Mitchell of Columbia University will deliver an address on Making Money and Making Goods.

Petition in Court Against Railroad Labor Board

The Railway Service & Supply Corporation which contracted with the Cleveland, Cincinnati, Chicago & St. Louis to repair freight cars and locomotives at the road's shops at Beech Grove, Ind., and Brightwood, Ind., has petitioned the Federal District Court at Chicago for a writ of certiorari in order to obtain a court ruling on the action of the Railroad Labor Board in declaring these contracts to be violations of the Transportation Act and of decisions of the Labor Board. Petitioner points out that under the contracts the road is saving from $115,000 to $125,000 annually on the repair of locomotives and approximately $11,000 a year on repair of cars. All of the legal arguments which have been advanced before the Board and directed against that body's right to rule against such contracts are cited, and petitioner avers that the Board's decision "unjustly and unlawfully interferes with and prejudices relations established by petitioner with its employees and the railway company" and "any unlawful interference [with these relations] will deprive the petitioner

of the full benefit of time, efforts, industry and large sums of money expended in perfecting the efficiency of its organization employed by it in operating the shops, to the great and irretrievable loss and damage of the petitioner." The application also calls attention to the fact that if the Board's ruling is allowed to stand "petitioner has good reason to fear that the railway company will terminate the contract" and "it will deter other railroads from seeking the services of the petitioner and from entering into similar contracts, all to the petitioner's great and irreparable damage." The Board is charged with exceeding the authority conferred upon it by the Transportation Act, and with infringing upon the judicial power of the courts and the legislative powers of Congress. The fact that the contractor was not represented at or notified of the hearings in the case is cited by the petitioner as depriving it of its rights of property and contract.

Cummins Postpones Plans for Railroad Legislation

Senator Cummins, chairman of the Senate committee on interstate commerce, announced on November 28 that he would not attempt to secure consideration at the present extra session or the forthcoming short session of Congress of bills which he had previously proposed, to amend the transportation act in order to provide a prohibition against strikes, compulsory consolidation of railroads, etc., but would withhold his bills until the next Congress. Senator Cummins has had conferences with the President on the subject and there had been reports that the President would suggest some legislation along these lines in a message at the opening of the regular session of Congress next week, but it is understood that it has now been practically decided that it is inadvisable to open up the subject at this time, particularly in view of the short time available for consideration of the ship subsidy, and plans are also being made for legislation for the relief of the farmer which it is hoped may cause some lessening of the demand for lower necessary appropriation bills on freight rates.

A delegation of representatives of the National Association of Railroad and Public Utilities Commissioners, headed by President D. H. Lewis, called on President Harding on November 23 to present the resolutions proposing amendments to the transportation act which had been adopted at their recent annual convention at Detroit, which included provision for the restoration of the powers of state commissions relating to rates and distribution of cars. They informed the President that they had brought the matters to his attention because it was understood he would probably touch upon the subject of transportation in his message to Congress.

The campaign for legislation to reduce freight rates, particularly on farm products, was opened in the Senate on November 23 in a speech by Senator Capper of Kansas, head of the farm bloc. After describing the conditions faced by the farmers as a result of low prices for their products, he referred to the recent large increases in railroad traffic and to the earnings of some of the more prosperous railroads and rumored increases in dividends to show that the roads could afford to reduce rates. He also argued that the railroads cannot afford not to make reductions in the interest of future traffic. He said that the railroads ought to make further rate reductions voluntarily and at once or in default of such action the Interstate Commerce Commission must reduce rates promptly, and he hoped to see the interstate commerce committee of the Senate report favorably at an early date on his bill repealing Section 15a of the transportation act. Senator Capper particularly criticized the provision in the law under which the Interstate Commerce Commission makes rates intended to produce a fair return for the railroads by groups averaging the strong roads with the weak roads.

James R. Howard, president of the American Farm Bureau Federation, in an address before the annual convention of the Association of Land Grant Colleges on November 21, said that the farmers are looking to Congress to bring relief from high railroad rates. "But we will look in vain," he said, "for the laws of economics supersede any statutory enactment. It is my own conviction that the solution of the railroad problem lies in a more economical handling of present facilities, the continual improvement of equipment and operation and such legislation as will permit the exercise of personal initiative with only that degree of government supervision which insures an honest service to the public, and ultimately in electrification."

Meetings and Conventions

The following list gives names of secretaries, dates of next or regular meetings and places of meetings:

AIR BRAKE ASSOCIATION.—F. M. Nellis, 165 Broadway, New York City, Next convention, May 1-4, 1923, Denver, Colo. Exhibit by Air Brake Appliance Association.

AIR BRAKE APPLIANCE ASSOCIATION.—J. F. Gettrust, The Ashton Valve Company, 318 Washington St., Chicago. Meeting with Air Brake Association.

AMERICAN ASSOCIATION OF DEMURRAGE OFFICERS.—F. A. Pontious, Supervisor of Demurrage and Storage, C. & N. W. Ry., Chicago.

AMERICAN ASSOCIATION OF DINING CAR SUPERINTENDENTS.—L. A. Stone, C. & E. I. Ry., Chicago.

AMERICAN ASSOCIATION OF ENGINEERS.—C. E. Drayer, 63 E. Adams St., Chicago.

AMERICAN ASSOCIATION OF GENERAL BAGGAGE AGENTS.—E. L. Duncan, 332 So. Michigan Ave., Chicago.

AMERICAN ASSOCIATION OF PASSENGER TRAFFIC OFFICERS.—W. C. Hope, C. R. R. of N. J., 143 Liberty St., New York.

AMERICAN ASSOCIATION OF RAILROAD SUPERINTENDENTS.—J. Rothschild, Room 400 Union Station, St. Louis, Mo.

AMERICAN ELECTRIC RAILWAY ASSOCIATION.—J. W. Welsh, 8 W. 40th St., New York.

AMERICAN RAILROAD MASTER TINNERS', COPPERSMITHS' AND PIPE FITTERS' ASSOCIATION.—C. Borcherdt, 202 North Hamlin Ave., Chicago, Ill.

AMERICAN RAILWAY ASSOCIATION.—J. E. Fairbanks, General Secretary, 75 Church St., New York, N. Y. Special session, December 6, Blackstone Hotel, Chicago.

Division I.—Operating. J. C. Caviston, 30 Vesey St., New York, N. Y.

Freight Station Section (including former activities of American Association of Freight Agents). R. O. Wells, Freight Agent, Illinois Central Railroad, Chicago, Ill.

Medical and Surgical Section. J. C. Caviston, 30 Vesey St., New York, N. Y.

Protective Section (including former activities of the American Railway Chief Special Agents and Chiefs of Police Association). J. C. Caviston, 30 Vesey St., New York, N. Y.

Safety Section. J. C. Caviston, 30 Vesey St., New York.

Telegraph and Telephone Section (including former activities of the Association of Railway Telegraph Superintendents). W. A. Fairbanks, 30 Vesey St., New York, N. Y. Annual meeting, December 12-14, Hotel La Salle, Chicago.

Division II—Transportation (including former activities of the Association of Transportation and Car Accounting Officers). G. W. Covert, 431 South Dearborn St., Chicago, Ill.

Division III.—Traffic, J. Gottschalk, 143 Liberty St., New York.

Division IV—Engineering, E. H. Fritch, 431 South Dearborn St., Chicago, Ill. Exhibit by National Railway Appliances Association.

Construction and Maintenance Section. E. H. Fritch.

Electrical Section. E. H. Fritch.

Signal Section (including former activities of the Railway Signal Association). H. S. Balliet, 30 Vesey St., New York, N. Y. Annual convention, March 13, Drake Hotel, Chicago.

Division V—Mechanical (including former activities of the Master Car Builders' Association and the American Railway Master Mechanics' Association). V. R. Hawthorne, 431 South Dearborn St., Chicago, Ill. Exhibit by Railway Supply Manufacturers' Association.

Equipment Painting Section (including former activities of the Master Car and Locomotive Painters' Association). V. R. Hawthorne, 431 South Dearborn St., Chicago, Ill.

Division VI—Purchases and Stores (including former activities of the Railway Storekeepers' Association). W. J. Farrell, 30 Vesey St., New York, N. Y.

Division VII—Freight Claims (including former activities of the Freight Claim Association). Lewis Pilcher, 431 South Dearborn St., Chicago, Ill.

Car Service Division—C. A. Buch, 718 18th St., N. W., Washington, D. C.

AMERICAN RAILWAY BRIDGE AND BUILDING ASSOCIATION.—C. A. Lichty, C. & N. W. Ry., 319 N. Waller Ave., Chicago. Exhibit by Bridge and Building Supply Men's Association.

AMERICAN RAILWAY DEVELOPMENT ASSOCIATION.—A. Leckie, Industrial Agent, Kansas City Southern Ry., Kansas City, Mo.

AMERICAN RAILWAY ENGINEERING ASSOCIATION.—(Works in co-operation with the American Railway Association, Division IV.) E. H. Fritch, 431 South Dearborn St., Chicago. Exhibit by National Railway Appliance Association.

AMERICAN RAILWAY MASTER MECHANICS' ASSOCIATION.—(See American Railway Association, Division V.)

AMERICAN RAILWAY TOOL FOREMEN'S ASSOCIATION.—R. D. Fletcher, 1145 East Marquette Road, Chicago. Exhibit by Supply Association of the American Railway Tool Foremen's Association.

AMERICAN SHORT LINE RAILWAY ASSOCIATION.—T. F. Whittelsey, Union Trust Bldg., Washington, D. C.

AMERICAN SOCIETY FOR STEEL TREATING.—W. H. Eiseman, 1600 Prospect Ave., Cleveland, Ohio.

AMERICAN SOCIETY FOR TESTING MATERIALS.—C. L. Warwick, University of Pennsylvania, Philadelphia, Pa.

AMERICAN SOCIETY OF CIVIL ENGINEERS.—Prof. J. H. Dunlap, University of Iowa, Iowa City, Ia. Regular meeting 1st and 3d Wednesdays in month, except July and August, 33 W. 39th St., New York.

AMERICAN SOCIETY OF MECHANICAL ENGINEERS.—Calvin W. Rice, 29 W. 39th St., New York. Annual meeting, December 4-7, 29 W. 39th St., New York.

Railroad Division—A. F. Stuebing, Manager Editor, Railway Mechanical Engineer, Woolworth Bldg., New York.

AMERICAN TRAIN DISPATCHER'S ASSOCIATION.—C. L. Darling, 1310-1311 Mallers Bldg., Chicago, Ill. Next convention, June 18, 1923, Chicago.

AMERICAN WOOD PRESERVERS' ASSOCIATION.—S. D. Cooper, A. T. & S. Fe R. R., Topeka, Kan. Next meeting, January 23, 1923, New Orleans, La.

ASSOCIATION OF RAILWAY CLAIM AGENTS.—H. D. Morris, Northern Pacific R. R., St. Paul, Minn.

ASSOCIATION OF RAILWAY ELECTRICAL ENGINEERS.—Jos. A. Andreucetti, C. & N. W., Room 411, C. & N. W. Sta., Chicago. Exhibit by Railway Electrical Supply Manufacturers' Association.

ASSOCIATION OF RAILWAY EXECUTIVES.—Alfred P. Thom (general council), 61 Broadway, New York.

ASSOCIATION OF RAILWAY SUPPLY MEN.—A. W. Clokey, 1658 McCormick Bldg., Chicago. Meeting with International Railway General Foremen's Association.

ASSOCIATION OF RAILWAY TELEGRAPH SUPERINTENDENTS.—(See American Railway Association, Division I.)

ASSOCIATION OF TRANSPORTATION AND CAR ACCOUNTING OFFICERS.—(See American Railway Association, Division II.)

BRIDGE AND BUILDING SUPPLY MEN'S ASSOCIATION.—John Nelson, Joseph E. Nelson & Sons, 3240 South Michigan Ave., Chicago. Meeting with convention of American Railway Bridge and Building Ass'n.

CANADIAN RAILWAY CLUB.—W. A. Booth, 53 Rushbrook St., Montreal, Que.

CAR FOREMEN'S ASSOCIATION OF CHICAGO.—Aaron Kline, 626 North Pine Ave., Chicago. Regular meetings, 2d Monday in month, except June, July and August, Great Northern Hotel, Chicago.

CAR FOREMEN'S ASSOCIATION OF ST. LOUIS, MO.—Thomas B. Koeneke, 604 Federal Reserve Bank Bldg., St. Louis, Mo. Meetings, first Tuesday in month at the American Hotel Annex, St. Louis.

CENTRAL RAILWAY CLUB.—Harry D. Vought, 26 Cortlandt St., New York. Regular meetings, 2d Thursday in January, March, May, September and November, Hotel Iroquois, Buffalo, N. Y.

CHIEF INTERCHANGE CAR INSPECTORS' AND CAR FOREMEN'S ASSOCIATION.—W. P. Elliott, Terminal Railroad Association of St. Louis, East St. Louis, Ill.

CHIEF INTERCHANGE CAR INSPECTORS' AND CAR FOREMEN'S SUPPLY MEN'S ASSOCIATION.—D. B. Wright, 34th St. and Artesian Ave., Chicago, Ill. Meeting with Chief Interchange Car Inspectors' and Car Foremen's Association.

CINCINNATI RAILROAD CLUB.—W. C. Cooder, Union Central Bldg., Cincinnati, Ohio. Meetings, 2d Tuesday in February, May, September and November.

EASTERN RAILROAD ASSOCIATION.—E. N. Bessling, 614 F St., N. W., Washington, D. C.

FREIGHT CLAIM ASSOCIATION.—(See American Railway Association, Division VII.)

GENERAL SUPPERINTENDENTS' ASSOCIATION OF CHICAGO.—C. H. Treichel, Grand Central Station, Chicago. Regular meetings, Wednesday, preceding 3d Friday in month, Room 1414, Manhattan Bldg., Chicago.

INTERNATIONAL RAILROAD MASTER BLACKSMITHS' ASSOCIATION.—W. J. Mayer, Michigan Central R. R., Detroit, Mich. Exhibit by International Railroad Master Blacksmiths' Supply Men's Association.

INTERNATIONAL RAILROAD MASTER BLACKSMITHS' SUPPLY MEN'S ASSOCIATION.—George P. White, 747 Railway Exchange, Chicago. Meeting with International Railroad Master Blacksmiths' Association.

INTERNATIONAL RAILWAY FUEL ASSOCIATION.—J. G. Crawford, 702 E. 51st St., Chicago. Exhibit by International Railway Supply Men's Association.

INTERNATIONAL RAILWAY GENERAL FOREMEN'S ASSOCIATION.—Wm. Hall, 1061 W. Wabash Ave., Winona, Minn.

INTERNATIONAL RAILWAY SUPPLY MEN'S ASSOCIATION.—C. W. Sullivan, Garlock Packing Co., 326 W. Madison St., Chicago. Meeting with International Railway Fuel Association.

MASTER BOILER MAKERS' ASSOCIATION.—Harry D. Vought, 26 Cortlandt St., New York.

MASTER CAR AND LOCOMOTIVE PAINTERS' ASSOCIATION.—(See A. R. A., Division V.)

MASTER CAR BUILDERS ASSOCIATION.—(See A. R. A., Division V.)

NATIONAL ASSOCIATION OF RAILWAY TIE PRODUCERS.—Warren C. Nixon, Western Tie & Timber Co., 905 Syndicate Trust Bldg., St. Louis, Mo.

NATIONAL ASSOCIATION OF RAILWAY AND UTILITIES COMMISSIONERS.—James B. Walker, 49 Lafayette St., New York.

NATIONAL FOREIGN TRADE COUNCIL.—O. K. Davis, 1 Hanover Square, New York.

NATIONAL RAILWAY APPLIANCE ASSOCIATION.—C. W. Kelly, People's Gas Bldg., Chicago. Annual exhibition at convention of American Railway Engineering Association.

NEW ENGLAND RAILROAD CLUB.—W. E. Cade, Jr., 683 Atlantic Ave., Boston, Mass. Next meeting, November 14.

NEW YORK RAILROAD CLUB.—Harry D. Vought, 26 Cortlandt St., New York. Regular meetings, 3d Friday in month, except June, July and August, at 29 W. 39th St., New York.

PACIFIC RAILWAY CLUB.—W. S. Wollner, 64 Pine St., San Francisco, Cal. Regular meetings, 2d Thursday in month, alternately in San Francisco and Oakland.

RAILWAY ACCOUNTING OFFICERS' ASSOCIATION.—E. R. Woodson, 1116 Woodward Building, Washington, D. C.

RAILWAY BUSINESS ASSOCIATION.—Frank W. Noxon, 600 Liberty Bldg., Broad and Chestnut Sts., Philadelphia, Pa.

RAILWAY CLUB OF PITTSBURGH.—J. D. Conway, 515 Grandview Ave., Pittsburgh, Pa. Regular meetings, 4th Thursday in month, except June, July and August, Fort Pitt Hotel, Pittsburgh, Pa.

RAILWAY DEVELOPMENT ASSOCIATION.—(See Am. Ry. Development Assn.)

RAILWAY ELECTRICAL SUPPLY MANUFACTURERS' ASSOCIATION.—J. Scribner, General Electric Co., Chicago. Annual meeting with Association of Railway Electrical Engineers.

RAILWAY EQUIPMENT MANUFACTURERS' ASSOCIATION.—J. W. Fogg, Boss Nut Company, 1732 N. Kolmar Ave., Chicago. Meeting with Traveling Engineers' Association.

RAILWAY FIRE PROTECTION ASSOCIATION.—R. R. Hackett, Baltimore & Ohio R. R., Baltimore, Md.

RAILWAY REAL ESTATE ASSOCIATION.—R. H. Morrison, C. & O. Ry., Richmond, Va.

RAILWAY SIGNAL ASSOCIATION.—(See A. R. A. Division IV, Signal Section.)

RAILWAY STOREKEEPERS' ASSOCIATION.—(See A. R. A., Division VI.)

RAILWAY SUPPLY MANUFACTURERS' ASSOCIATION.—J. D. Conway, 1841 Oliver Bldg., Pittsburgh, Pa. Meeting with A. R. A., Division V.

RAILWAY TELEGRAPH AND TELEPHONE APPLIANCE ASSOCIATION.—G. A. Nelson, 30 Church St., New York.

RAILWAY TREASURY OFFICERS' ASSOCIATION.—L. W. Cox, Commercial Trust Bldg., Philadelphia, Pa.

ROADMASTERS' AND MAINTENANCE OF WAY ASSOCIATION.—P. J. McAndrews, C. & N. W. Ry., Sterling, Ill. Exhibit by Track Suply Association.

ST. LOUIS RAILWAY CLUB.—B. W. Frauenthal, Union Station, St. Louis, Mo. Regular meetings, 2d Friday in month, except June, July and August.

SIGNAL APPLIANCE ASSOCIATION.—F. W. Edmunds, Sunbeam Electric Manufacturing Company, New York City. Meeting with American Railway Association, Signal Section.

SOUTHERN AND SOUTHWESTERN RAILWAY CLUB.—A. J. Merrill, P. O. Box 1205, Atlanta, Ga. Regular meetings, 3d Thursday in January, March, May, July, September and November, Piedmont Hotel, Atlanta.

SOUTHERN ASSOCIATION OF CAR SERVICE OFFICERS.—J. L. Carrier, Car Serv. Agt., Tenn. Cent. Ry., 319 Seventh Ave., North Nashville, Tenn.

SUPPLY ASSOCIATION OF AMERICAN RAILWAY TOOL FOREMEN'S ASSOCIATION.—H. S. White, 9 N. Jefferson St., Chicago.

TRACK SUPPLY ASSOCIATION.—W. C. Kidd, Ramapo Iron Works, Hilburn, N. Y. Meets with Roadmasters' and Maintenance of Way Association.

TRAVELING ENGINEERS' ASSOCIATION.—W. O. Thompson, 1177 East 98th St., Cleveland, Ohio. Exhibit by Railway Equipment Manufacturers' Association.

WESTERN RAILWAY CLUB.—Bruce V. Crandall, 605 North Michigan Ave., Chicago. Regular meetings, 3d Monday each month except June, July and August.

Traffic News

The Traffic Club of New York has elected as president for the ensuing year Frank W. Smith, Chairman of the Official Classification Committee.

The traffic clubs of Grand Rapids and Lansing, Mich., have joined the Associated Traffic Clubs of America, making the total membership of this organization to date 32 clubs.

The report of the Government superintendent of Glacier National Park for the season just closed shows that 23,935 people visited the park last summer. This is an increase of 21 per cent over the season of 1921. The increase in arrivals by railroad was 53 per cent.

The consolidated freight classification, as issued by the Official Classification Committee, 143 Liberty street, New York city, can now be had in a "Pocket edition," 5 in. by 6¾ in. The page-forms are reduced by photographic process from the standard edition of the classification. A limited number of copies will be for sale by the committee; price two dollars.

Because of the threatened destruction by fire of a large stock pile of bituminous coal, and at the recommendation of the federal fuel distributor, the Interstate Commerce Commission, in Service Order No. 27, directed the Baltimore & Ohio to assign open top cars at the mine of the Elkhorn Piney Coal Manufacturing Company, located on the Long Fork Branch of the Baltimore & Ohio at Weeksbury, Ky., for the loading of coal, at the rate of 30 cars per day for each consecutive working day until a total of 250 cars are so furnished.

Because of the rapid improvement in the coal situation, the Interstate Commerce Commission on November 23 issued an amendment of its Service Order No. 25 so as to release from the requirement that priority be given to coal shipments, open top gondola cars with sides 48 in. or less in height. The previous order had exempted only cars with sides of 42 in. or less.

The commission has issued an order directing the Green Brier & Eastern, the Chesapeake & Ohio and the Norfolk & Western to furnish four cars a day for 10 consecutive working days to three named coal mines for coal consigned to the Commonwealth of Virginia Purchasing Commission in preference to any other use of such cars.

Freight traffic on the Warrior river, Alabama is increasing, and barges are able to get loads both ways. The Birmingham Age-Herald reports a recent shipment of three barges of canned goods from Mobile to up-river ports, to be distributed to points in the states of Alabama, Tennessee, Georgia and Mississippi. These goods came from the Pacific coast on a Luckenbach line steamer to Mobile. Three barges laden with wire mill products were sent from Birmingham to Mobile to be transferred to ocean going barges for Texas. Four barges laden with sulphur from Freeport, Tex., have just moved from Mobile to Birmingham. Selma is shipping 1,700 bales of cotton for export by rail to Demopolis and thence by barge to Mobile. Northbound barges are bringing Brazilian ore for the Tennessee company at Ensley.

New Haven Football Traffic

The New York, New Haven & Hartford reports that the passengers carried to and from New Haven on Saturday, November 25, on the occasion of the Harvard-Yale football game, numbered 56,978; and that 122 passenger trains were run, 59 to New Haven in the forenoon and 63 out in the afternoon and evening. During a period of two hours in the forenoon, a train was unloaded every 2.1 minutes; and for a similar period in the afternoon, a train was loaded every 2.5 minutes. Of the inward trains, 45 were specials and of the outward, 49; and 83 locomotives 369 cars had to be assigned to passenger service over and above the normal number. Forty-seven extra trains had to be run to take empty cars to their proper starting points and, after the rush, to return them to their usual locations. The whole movement was carried

out on substantially the schedules arranged. The total number of passengers was about 3,000 greater than the total on a similar occasion in November, 1920.

Anthracite Shipments in October

Shipments of anthracite in October as reported to the Anthracite Bureau of Information, Philadelphia, amounted to 6,567,928 tons, as compared with 5,872,783 tons during the corresponding month last year, an increase of 695,145 tons. Shipments by originating carriers were as follows:

	October, 1922	October, 1921
P. & R.	1,266,092	1,104,828
L. V.	1,166,195	1,048,996
C. of N. J.	617,668	570,189
D. L. & W.	936,375	759,492
D. & H.	828,216	898,376
Pennsylvania	579,306	492,632
Erie	701,270	618,034
N. Y. O. & W.	179,865	126,925
L. & N. E.	292,941	253,311
Total	6,567,928	5,872,783

Coal Production

Bituminous coal production during the week of November 13-18 is placed by the Geological Survey at 11,213,000 tons as against 10,147,000 tons in the week preceding. Early returns for the week, November 20-25, indicate that 11,000,000 tons will be raised. Both bituminous coal and anthracite output in the week ended November 18 were at high rates, and the total coal raised, 13,404,000 net tons, was the highest weekly outturn since the strike and was exceeded this year only in the week ended March 25, when the total outturn was 13,543,000 net tons.

The movement of coal across the Hudson River into eastern New York and New England increased to 3,289 cars of bituminous coal and 3,582 cars of anthracite in the week ended November 18. In addition, 215 cars of soft coal and 35 cars of anthracite were forwarded through Rouses Point. The total all-rail shipments of bituminous coal during 1922 to date are now 21 per cent behind, whereas the anthracite shipments are 72 per cent greater than during the corresponding period in 1921.

The movement of bituminous coal from Lake Erie ports increased slightly in the week ended November 19. Reports from the Ore and Coal Exchange show that 1,042,792 tons were dumped. Of the total dumpings, 1,003,621 tons were cargo coal and 39,171 tons were vessel fuel. Cumulative dumpings of cargo coal during the present season to date stand at 16,839,249 tons, of which 15,718,082 tons went to regular Lake territory, and 1,221,167 tons went to destinations not ordinarily taking Lake coal. In comparison with the three years preceding, the quantity of cargo coal dumped in 1922 is about 22 per cent less than the average for those years.

Colorado River Basin Compact Signed

The Colorado River Basin compact was signed on November 24 at Santa Fe, N. M., by the representatives of the seven states concerned, according to a telegram received at the Department of Commerce, from Herbert Hoover, chairman of the Colorado River Commission. The States of Arizona, California, Colorado, Nevada, New Mexico, Utah, and Wyoming have resolved to enter into a compact, the major purposes of which are to provide for equitable division and apportionment of the use of the waters of the Colorado river system, to secure the expeditious agricultural and industrial development of the Colorado River Basin, the storage of its waters and the protection of life and property from floods. The compact is to become binding when it shall have been approved by the legislatures of each of the signatory states and by the Congress of the United States. It was approved by Chairman Hoover.

The project involves one of the greatest national improvements, requiring over a term of years an expenditure of several hundred millions of dollars. The land under irrigation in 1920 from the river and its tributaries amounted to about 2,464,000 acres in the United States and 190,000 acres in Mexico. It is estimated that the amount of irrigated land can be increased to about 6,123,000 acres in the United States and 800,000 in Mexico. Development of six million horsepower is a possibility as an incident to development of irrigation storage.

Commission and Court News

Interstate Commerce Commission

The commission has suspended until March 25 the operation of numerous schedules of Western and Southwestern carriers and Agents E. B. Boyd and F. A. Leland which propose a general readjustment of rates on grain and feed from western and southwestern points to the Mississippi river crossings, Cairo, Ill., and south thereof, also interior points in the Mississippi Valley and southeastern territory.

The commission has suspended from November 30 and later dates until March 30, 1923, the operation of schedules which propose to reduce the transcontinental rates applicable on various commodities from New York, N. Y., piers, Southern Pacific, Atlantic Steamship Lines (Morgan Line) via Galveston to the same basis applicable from Group "D" (Chicago) via all-rail to the same points of destination in the west and southwest.

United States Supreme Court

Statute Imposing Attorney's Fees on Railroad Held Invalid

An action against the Chicago & North Western questioned the validity of a Nebraska statute making every common carrier liable for a reasonable attorney's fee in suits for collection from it of claims for damage, etc., not adjusted within 60 days.

A corporation of Fremont, Neb., which shipped hogs to South Omaha sued for $2,097 and $900 attorney's fees, for loss or injury to hogs shipped in 105 intrastate shipments, the railroad having refused to pay any amount whatever. The jury awarded $802, with interest and the court fixed attorney's fees at $600. On appeal to the State Supreme Court, a remittitur was consented to for $209 and the attorney's fee was reduced to $200, but the Supreme Court taxed the railroad company with an attorney's fee of $100 for services in the Supreme Court.

The Supreme Court of the United States, on the question of the statutory provision for attorney's fees said that: "These are costs imposed on the defeated defendant in the litigation but not on the defeated plaintiff. This is an inequality and the question is whether it is a discrimination which the legislature may make and not take the defeated defendant's property without due process of law." The court made an extended review of its more recent decisions concerning the constitutional validity of inequalities of this general character as between claimants and common carriers, and stated as the general rule to be gathered from these cases that "common carriers engaged in transportation may be grouped in a special class to secure the proper discharge of their functions, and to meet their liability for injuries inflicted in their performance; that the seasonable payment of just claims for faulty performance is a part of their duty, and a reasonable penalty may be imposed for failure promptly to consider and pay such claims. This penalty or stimulus may be in the form of attorney's fees. But it is also apparent from these cases that such penalties or fees must be moderate. . . . The 105 claims sued on were reduced to 72, and the trial lasted four days. The Supreme Court considers that in such case, an attorney's fee of $200 does not shock one's sense of fairness. The fee of $100 imposed on the railroad when it won its case on appeal by reducing the amount recovered in the trial court presented a different question. The original Nebraska statute was amended to read "and in event an appeal be taken, and the plaintiff shall succeed, such plaintiff shall be entitled to recover an additional attorney's fee to be fixed by such court or courts." . . . Thus we have a requirement that the carrier shall pay the attorneys of the claimant full compensation for their labors in resisting its successful effort on appeal to reduce an unjust and excessive claim against it. This we do not think is fair play. Penalties im-

posed on one party for the privilege of appeal to the courts, deterring him from vindication of his rights, have been held invalid under the Fourteenth Amendment.—Missouri Pacific v. Tucker, 230 U. S. 340. . . . So much of the statute as imposed an attorney's fee upon carrier in this case in the Supreme Court was invalid. "The judgment of the Supreme Court is to this extent reversed and in other respects affirmed." —Chicago & North Western v. Nye Schneider Fowler Co. Opinion by Mr. Chief Justice Taft. Decided November 13.

Labor Board Decisions

Payment for Yard Crews

Helping Trains Out of Terminals

Prior to April 1, 1920, yard crews were helping trains out of yards and beyond yard limit boards at various terminals on the Minneapolis & St. Louis as a part of their regular assignment, compensation therefor being covered by yard rates without arbitraries or special allowances. After that date yard crews were allowed a minimum of one hour at road rates of pay, in addition to the day's pay for yard service, for each time such service was required of them, in accordance with an interpretation of paragraph b, Article 20, of supplement 24 to General Order No. 27. After the receipt of decisions rendered by the Labor Board of Adjustment No. 1, indicating that no change in the manner of payment for such services was contemplated in paragraph b, of Article 20, this allowance was discontinued. Members of the train men's organizations then appealed to the Labor Board, contending that this allowance should be continued. The Labor Board decided that paragraph b applied only when yard engineers assist trains beyond the switching limits.—Decision No. 1285.

Classification of Drawbridge Tenders

In a controversy with the Pere Marquette the Order of Railroad Telegraphers raised the question: (A) whether employees who operate drawbridges and are classified as levermen should be paid at a rate less than that provided in Decision No. 2 for such classes, and (B) whether employees who decline to sign application or a contract providing for a lower rate of pay and different conditions should be given employment in their former positions and paid for time lost because of their refusal to sign such a contract. The Labor Board decided that no change should be made in the rates of pay and conditions of employment for drawbridge tenders unless made in accordance with the rules of the agreement or in the manner provided in the Transportation Act. The employees refusing to sign the contract and not taking employment were considered as having severed their connection with the company and claims were denied.—Decision No. 1253.

Compensation for Working on Rest Days

Certain train dispatchers on the Erie were required to work on their rest days during the period from January 30 to March 12, 1921, in violation of Decision No. 2; and application was made for reimbursement and refund of amounts deducted from their earnings as set forth in Decision No. 91. The Erie had issued instructions suspending relief days as it felt that there was no outstanding decision of the board on this point. The Labor Board decided that the carrier should reimburse the train dispatchers for the amount arbitrarily deducted from their earnings and for the rest days which they were required to work in January, February and March, 1921. Decision No. 1332.

The Order of Railroad Telegraphers also had a case before the Labor Board against the Erie with reference to the request of employees in telegraph service for reimbursement of amounts deducted from their wages in January, February and March, 1921. The employees stated that the action of the carrier was taken without consulting or advising the committee regularly elected to represent these employees. The carrier stated that this reduction in working time of the force was put into effect because of the necessity of economizing, as its operating expenses were at that time in excess of its operating revenues. The Labor Board decided that the action of the carrier in deducting certain amounts from the wages of telegraph employees was in violation of the Transportation Act and that the employees affected should be reimbursed for the amount deducted during the above-mentioned months.—Decision No. 1286.

Equipment and Supplies

Locomotives

THE CHICAGO, MILWAUKEE & ST. PAUL has ordered 25 Mikado type locomotives from the Baldwin Locomotive Works, in addition to the 50 reported in the *Railway Age* of November 25.

THE NORTHERN PACIFIC, reported in the *Railway Age* of October 21 as inquiring for 20 Mikado, 20 Pacific, 15 switching and 4 Mallet type locomotives, has ordered 49 locomotives from the American Locomotive Company.

THE CENTRAL OF NEW JERSEY, reported in the *Railway Age* of November 18 as inquiring for 10, 8-wheel switching locomotives, has ordered this equipment from the American Locomotive Company. This company is now inquiring for 5, 6-wheel switching locomotives.

Freight Cars

THE WINSTON-SALEM SOUTHBOUND is inquiring for 25 gondola cars.

THE CANADIAN NATIONAL RAILWAYS are inquiring for 1,250 stock cars and 50 caboose cars.

THE MANILA RAILROAD is inquiring through its office at 17 Battery Place, New York City, for prices on 50 box cars of 28 tons' capacity.

THE MISSOURI PORTLAND CEMENT COMPANY has ordered 10 steel hopper cars of 50 tons' capacity from the American Car & Foundry Company.

THE NORTHERN PACIFIC, reported in the *Railway Age* of October 28 as inquiring for 3,000 box cars, is expected to place this order this week.

THE PITTSBURG, SHAWMUT & NORTHERN, reported in the *Railway Age* of September 16 as inquiring for 200 stock cars, has postponed this inquiry indefinitely.

THE CHICAGO, ROCK ISLAND & PACIFIC, reported in the *Railway Age* of November 18 as having placed orders for 500 box cars and 500 gondola cars, has issued an inquiry for 250 refrigerator cars, 250 ballast cars, 250 flat cars and 250 stock cars.

THE PERE MARQUETTE, reported in the *Railway Age* of October 28 as inquiring for 500 hopper cars of 50 tons' capacity and 1,000 box cars, has ordered the former from the Ralston Steel Car Company and the latter from the Western Steel Car & Foundry Company.

THE SOUTHERN PACIFIC, reported in the *Railway Age* of November 18 as contemplating the purchase of 7,000 freight cars, is asking for prices on 3,700, 40 ft. single sheathed box cars of 50 tons' capacity; 650, 40 ft. flat cars of 50 tons' capacity; 550, 36 ft. 6 in. stock cars of 40 tons' capacity and 100, 8-wheel caboose cars.

THE CHICAGO, MILWAUKEE & ST. PAUL, reported in the *Railway Age* of October 28 as inquiring for 3,000 gondola cars, 1,500 box cars and 500 automobile cars, has placed orders with the Bettendorf Company for 3,000 gondola cars, the Western Steel Car & Foundry Company for 2,000 box cars and the General American Car Company for 500 automobile cars.

Passenger Cars

THE PERE MARQUETTE is inquiring for 2 dining cars.

THE PHILADELPHIA & READING is inquiring for 45 steel suburban passenger coaches and 5 steel suburban combination passenger and baggage cars.

THE CANADIAN NATIONAL RAILWAYS are inquiring for 35 first class coaches, 20 sleeping cars, 30 baggage cars, 10 mail cars and 50 express refrigerator cars.

Iron and Steel

THE CHICAGO UNION STATION company is inquiring for 1,500 tons of structural steel to be used on the Roosevelt Road viaduct, Chicago.

THE CHICAGO, ROCK ISLAND & PACIFIC has placed an order with the Milwaukee Bridge Company for 103 tons of structural steel for bridge spans.

Miscellaneous

THE CHICAGO UNION STATION COMPANY has ordered 6 tractors and 200 trailers from the Mercury Manufacturing Company, Chicago, and 2 tractors from the Elwell-Parker Electric Company, Cleveland, O., for use in the new mail terminal.

Signaling

THE ILLINOIS CENTRAL has ordered from the General Railway Signal Company an electric interlocking machine, Model 2, for installation at Homewood, Ill. The machine will have 50 working levers. The order includes 22 switch machines, Model 5.

Railway Construction

CHICAGO, BURLINGTON & QUINCY.—This company has awarded a contract to Joseph E. Nelson & Sons, Chicago, for the laying of 18,000 ft. of 16 in. pipe for its water treating plant at Galesburg, Ill.

CHICAGO, ROCK ISLAND & PACIFIC.—This company, reported in the *Railway Age* of November 18 as closing bids November 14 for a frame ice house at Eldon, Ia., to cost approximately $12,000, has awarded the contract to Joseph E. Nelson & Sons, Chicago. This company will also accept bids until December 8 for the construction of a brick and stone station at Clay Center, Kan., to cost approximately $15,000.

EDWARD HINES YELLOW PINE TRUSTEES.—The Interstate Commerce Commission has issued a certificate authorizing the Edward Hines Yellow Pine Trustees to place in operation in interstate commerce a railroad from Lumberton to Kiln, Miss., a distance of approximately 52 miles. The road was built primarily to facilitate the applicants' logging operations, but a demand arose from the inhabitants of the territory to have it placed in operation as a common carrier.

ILLINOIS CENTRAL.—This company will construct an extension and rearrange its passenger station at New Orleans, La., at an approximate cost of $20,000.

MORGAN'S LOUISIANA & TEXAS.—This company has been ordered by the Louisiana Public Service Commission to construct a viaduct over and across its tracks, facilities and properties in the fifth district in the city of New Orleans, La.

MISSOURI PACIFIC.—This company has awarded a contract to Joseph E. Nelson & Sons, Chicago, for the construction of a one-story brick boiler house 47 ft. by 50 ft. at Coffeyville, Kan.

YAKIMA SOUTHERN.—This company will construct 90 miles of line from Yakima to Underwood in the state of Washington. Contracts for grading and bridges will be let in May, 1923. The maximum grade will be 1½ per cent. The grading on 60 miles of the line through the mountains will be side hill excavation consisting of 30 per cent solid rock, 40 per cent loose rock and 30 per cent earth, and on 30 miles in the valley will consist principally of earth. There will be 12 bridges averaging 100 ft. in length, one tunnel 5,000 ft. long and another tunnel 1,000 ft. long.

THE NORFOLK & WESTERN announces that an agreement has been completed with the newly formed association of its shop employees.

A FIRE at Springfield, Mass., on Sunday afternoon, November 26, damaged the passenger station of the Boston & Albany about $25,000. That part of the station on the north side of the tracks was burned out inside. Plans already had been made to discontinue the ticket office on the north side and to concentrate all ticket selling on the south side.

Supply Trade News

John B. Bassett has been appointed assistant engineer of the New York district with office at 120 Broadway, New York City, of the **General Electric Company,** Schenectady, N. Y.

C. G. Harwig, chief engineer of the Regan Safety Devices Company, with headquarters at Niagara Falls, N. Y., has been appointed sales engineer of the **Hall Switch & Signal Company,** with headquarters at Chicago.

The Reed-Prentice Company, Worcester, Mass., has purchased outright the good will, business and certain assets of the Becker Milling Machine Company, Hyde Park, Mass., and the Whitcomb-Blaisdell Machine Tool Company, Worcester, Mass., and will manufacture the products of these two companies henceforth in its own plant at Worcester. The products will carry their former names, but the manufacturing will be all concentrated in the Reed-Prentice plant and the selling will be done by their present, and enlarged, sales force.

E. Bodde has been appointed consulting engineer for the **Regan Safety Devices Company, Inc.,** with headquarters at Niagara Falls, N. Y. Mr. Bodde was born in Holland and studied in Paris and London before coming to America in 1902. His first position in this country was in the testing room of the General Electric Company at Schenectady, N. Y. He was later employed by the Hall Switch Signal Company in the engineering department at Garwood, N. J., and left this position to undertake research work and wireless telegraphy in Professor Fessenden's laboratory at Brant Rock, Mass. His next position was with the Norwich University at Northfield, Vt., after which he returned to the General Electric Company at Lynn, Mass. During the war he was associated with Elihu Thompson in research work. When the war closed he contracted with the government of China to head the department of electricity in the Institute of Technology at Shanghai, China, which position he was holding at the time of his recent appointment.

Rice & Ilsley, Inc., is the name of a new firm of engineer-appraisers located at 18 Tremont street, Boston, Mass., with which is associated **Ernest W. Rice,** architect, and **Arthur B. Ilsley,** formerly engineer of bridges, Lines East, of the Southern Railway with headquarters at Charlotte, N. C. Mr. Ilsley was born at Limerick, Me., on March 29, 1873, and was graduated from Dartmouth College and the Thayer School of Civil Engineering, entering railway service with the New York, New Haven & Hartford in February, 1896. He subsequently left the New Haven to go with the Boston & Maine as assistant bridge engineer, serving in that capacity until March, 1904, when he left that road to become assistant engineer in the bridge department of the Southern Railway. In August, 1909, he was promoted to engineer of bridges and served in that capacity until February, 1917, when he was appointed as engineer of bridges, Lines East, following a division of jurisdiction, a position he held until his recent resignation. Mr. Rice was formerly employed by the American Appraisals Company, Milwaukee, Wis., and has had 20 years' experience in this work, during the last two years of which he was district superintendent of the company for New England.

Bethlehem Steel Corporation Absorbs the Midvale and the Cambria Companies

The board of directors of the Bethlehem Steel Corporation at a special meeting on November 24 authorized contracts for the purchase of the plants and other assets of the Midvale Steel & Ordnance Company and of the Cambria Steel Company, excepting the ordnance plant and other business located at Nicetown, Pa., and assets appurtenant thereto. In payment for the properties to be acquired, the Bethlehem Steel Corporation, besides providing for the assumption of the bonds and other indebtedness of the Midvale and Cambria companies will issue about $97,650,000

par value, of the Bethlehem common stock, of which $95,000,000, par value, will go to the Midvale Company for distribution on dissolution to its stockholders, and the balance to the holders of the stock of Cambria not held by Midvale. As a result of these purchases the stockholders of the Midvale Company will receive for each two shares of $50 par value, of the Midvale Company stock, $95, par value, of the Bethlehem common stock, together with a pro rata share of the stock of the new corporation to which the Nicetown plant is to be transferred.

Through the acquisition of the properties of the Midvale and Cambria companies, the Bethlehem Company will acquire plants at Coatesville and Johnstown, Pa., and Wilmington, Del., and important developed iron ore properties in Michigan and Minnesota, as well as developed coal properties in Pennsylvania. It will also give to Bethlehem important lines of steel products which it does not now manufacture, such as steel freight and mine cars, steel wheels, boiler tubes, agricultural implement parts, etc. The Bethlehem Company's present annual ingot capacity of 4,800,000 tons will be increased to 7,600,000 tons by the Midvale-Cambria purchase.

No increase in the aggregate indebtedness is necessary for this transaction. With the additional common stock to be issued for the properties to be purchased and with the 8 per cent preferred stock converted into the new 7 per cent cumulative preferred stock, the approximate capitalization of Bethlehem Steel Corporation will be about $213,500,000 funded debt, $62,000,000 7 per cent preferred stock, $180,250,000 common stock. The combined investment in property and plant, less depreciation and depletion, will be about $465,500,000 and the aggregate net quick assets will be about $133,700,000.

Standard Stoker Company

The management of the Standard Stoker Company, Inc., New York, has been changed. Frank L. Connable, of New York, vice-president of E. I. du Pont de Nemours Co., who was president of the Standard Stoker Company, is now chairman of the board; W. A. Larner, of New York, vice-president of Peyton-du Pont Securities Company, is now president; Eugene du Pont, of Greenville, Del., a director of E. I. du Pont de Nemours, remains as vice-president of the Standard Stoker Company, and T. W. Keithley, of Wilmington, Del., formerly secretary, is now secretary and treasurer. The directors include F. L. Connable, W. C. Peyton, of New York, who is president of Peyton-du Pont Securities Company; W. A. Simonton, director of traffic of E. I. du Pont de Nemours Co., Wilmington, Del.; G. W. Keithley, Eugene du Pont and W. A. Larner. W. R. Williams, of Richmond, Va., has been appointed general manager with headquarters for the present at Erie, Pa., and Frank P. Roesch, who was western manager, has been appointed sales manager with headquarters at Chicago.

W. R. Williams

William R. Williams was born in Bristol, Va., on November 16, 1866, and was educated in the schools of Richmond, Va. He later, for ten years, attended Virginia Mechanics' Institute, a night school, part of the time teaching mathematics and drawing. At the age of 15 he entered the employment of the Old Dominion Iron & Steel Co. at Belle Isle, Richmond, serving for six years and when he left that company was chief of works' office. He later went to the Richmond Locomotive Works, and was secretary of the company when it was consolidated with the American Locomotive Company. He remained with the latter company two years as local purchasing agent—a total length of service with the locomotive companies of 18 years. In 1905, in co-operation with Joseph Bryan, formerly president of the Richmond Locomotive Co., he organized the Richmond Forgings Corporation. Mr. Williams served as vice-president of the new company until his recent appointment as general manager of the Standard Stoker Company. In July, 1920, he was appointed assistant secretary of war by President Wilson and served until March 4, 1921, when he was reappointed by President Harding and served for one month, returning to the Richmond Forgings Corp.

Frank P. Roesch was born in Alsace, France, and came to this country immediately after the close of the Franco-Prussian War. After graduating from high school he entered the service of the Chicago, Rock Island & Pacific as machinist's apprentice at Trenton, Mo., and while serving his apprenticeship studied mechanical engineering under the tuition of his father. Upon the completion of his apprenticeship he went west, working as a machinist in various shops until he resigned a foremanship to take a job as fireman, being later advanced to locomotive engineman. In 1899 he was promoted to traveling engineer on the Colorado & Southern and later was general traveling engineer of the Colorado & Southern System-Atchison, Topeka & Santa Fe, joint lines. In February, 1902, he was appointed master mechanic of the Chicago & Alton at Slater, Mo. He later served as general manager of the Hicks Locomotive & Car Works until the plant was sold in 1906, when he resigned to become master mechanic of the Southern Railway at Birmingham, Ala., and later was transferred to Spencer, N. C. In 1908 he was appointed master mechanic of the El Paso & Southwestern at Douglas, Ariz., where he remained until August, 1918, when he was appointed regional fuel supervisor, Northwest Region, U. S. R. A., and at the close of the railroad administration he became identified with the Standard Stoker Company, as its western manager.

Frank P. Roesch

Mr. Roesch has been a frequent contributor to the various railway technical journals since 1898. He is an authority on subjects pertaining to locomotive operation, combustion, etc., and is a past president of the Traveling Engineers' Association.

B. H. Tripp, formerly San Francisco manager of the Chicago Pneumatic Tool Co., has associated himself with **F. C. Severin,** formerly of Niles-Bement-Pond Company and Betts Machine Company in the sale of new and used machinery, with offices at 2220 Chestnut street, Philadelphia, Pa., and 25 Church street, New York City, under the name of **Severin-Tripp Machinery Company.**

Obituary

J. J. McCarthy, treasurer and chairman of the board of directors of the Chicago Cleveland Car Roofing Company, Chicago, died in that city from pneumonia on November 25.

J. E. Simmons, assistant to the vice-president in charge of sales of the Republic Railway Supply Company, Chicago, died on November 24 from paralysis. Mr. Simmons was born in 1860 at Devonshire, England, and came to this country in 1880, where he entered the employ of the Lake Shore & Michigan Southern in the car repair department at Cleveland, Ohio, and later at Youngstown, Ohio. Some time thereafter he was placed in charge of the car department of the Pittsburgh Coal Company at Pittsburgh, Pa. He was later employed at the Hicks Locomotive Plant, Chicago, and later represented the Pittsburgh Steel Foundry and the Ft. Pitt Spring Company. In 1917 he entered the employ of the Joliet Railway Supply Company as assistant to the vice-president in charge of sales and upon the taking over of this company by the Republic Railway Supply Company in July, 1922, he was appointed to the same position, which position he was holding at the time of his death.

Railway Financial News

ATLANTA & NORTH CAROLINA.—*Asks Authority to Issue Bonds.*—This company has applied to the Interstate Commerce Commission for authority to issue $325,000 of first mortgage 6 per cent bonds for refunding purposes.

ATLANTA, BIRMINGHAM & ATLANTIC.—*Receiver Asks Permission to Issue Certificates.*—B. L. Bugg, receiver, has filed a petition in the United States District Court at Atlanta, Ga., asking for permission to issue $80,000 receiver's certificates for repairing 400 wooden gondolas. Judge S. H. Sibley has set the date of hearing on the petition for December 2.

BANGOR & AROOSTOOK.—*Asks Authority for Equipment Trust.*—This company has applied to the Interstate Commerce Commission for authority to issue $250,000 of equipment trust certificates for the purchase of 300 box cars.

BOSTON & MAINE.—*Authorized to Issue Bonds.*—The Interstate Commerce Commission has authorized an issue of $4,000,000 of 6 per cent mortgage bonds to be sold at not less than 87.89 to provide for the payment of bonds maturing on January 1 and May 1.

CHICAGO & ALTON.—*Asks Authority to Issue Receivers' Certificates.*—The receivers have applied to Federal Judge Carpenter for authority to issue $2,000,000 receiver's certificates. One half of the amount sought will be used in repairing 24 locomotives and 500 cars, 400 of which are coal cars, and for the purchase of 90-lb. rail to be used on 15 miles of its line. The other half of the $2,000,000 is required to pay off pressing debts.

CHICAGO, ATTICA & SOUTHERN.—*Authorized to Operate Lines.*—The Interstate Commerce Commission has issued a certificate authorizing this company to acquire and operate a line from La Crosse to a point 25.72 miles north of Brazil, Ind., and of a branch line extending from Percy Junction to the Illinois state line, having a total length of about 145 miles. The lines form a part of what was formerly the coal railway division of the Chicago & Eastern Illinois, which were recently abandoned in accordance with a certificate issued by the commission. The company proposes to pay $250,000 for the property.

DEATH VALLEY.—*Authorized to Issue Stock.*—Upon further consideration, the Interstate Commerce Commission has reversed its former decision denying the application of this company for authority to issue stock for the purpose of retiring outstanding first mortgage bonds and has authorized an issue of $99,100 for this purpose.

DETROIT & MACKINAC.—*Asks Authority to Issue Bonds.*—This company has applied to the Interstate Commerce Commission for authority to issue and sell $450,000 of prior lien bonds, the proceeds to be used to pay off notes.

GLADY & ALPENA.—*Abandonment of Line Authorized.*—The Interstate Commerce Commission has issued a certificate authorizing the abandonment as to interstate and foreign commerce of this company's line of railroad from Gladwin to Evenwood, W. Va., 18 miles. The line was built primarily to handle forest products and the available supply of timber has been cut.

MAGMA ARIZONA.—*Authorized to Issue Stock.*—This company has been authorized by the Interstate Commerce Commission to issue $800,000 of stock at not less than par for the purpose of changing its narrow-gage railroad of 30 miles connecting at Magma, Ariz., with the Arizona Eastern, from narrow gage to standard gage.

MISSOURI, KANSAS & TEXAS.—*Extension of Time.*—J. & W. Seligman & Co. and Hallgarten & Co., reorganization managers, have announced that the time for the deposit of assignments of claims against the road and of its guaranteed bonds has been extended to January 2, inclusive.

NEW YORK CENTRAL.—The United States Supreme Court, in a decision handed down on November 27, held that the consolidation of the Lake Shore & Michigan Southern and other roads into the New York Central Railroad was not in violation either of the Sherman or Clayton anti-trust laws. The decision was by Justice Van Devanter in a case brought by the General Investment Company of Maine.

NEW YORK, ONTARIO & WESTERN.—*New Director.*—J. L. Richards has been elected a director to succeed Thomas De Witt Cuyler, deceased.

PENNSYLVANIA COMPANY.—*New Director.*—C. E. Ingersoll has been elected a director to succeed Thomas De Witt Cuyler, deceased.

PENNSYLVANIA RAILROAD.—*New Director.*—Arthur W. Thompson, of Pittsburgh, Pa., has been elected a director to succeed Thomas De Witt Cuyler, deceased.

PITTSBURGH, CINCINNATI, CHICAGO & ST. LOUIS.—*New Director.*—Bayard Henry has been elected a director to succeed Thomas De Witt Cuyler, deceased.

RICHMOND, FREDERICKSBURG & POTOMAC.—*Operating Study.*—See article on another page of this issue entitled "Perishable Freight Service Specialty of R. F. & P."

ST. LOUIS-SOUTHWESTERN.—*Preferred Dividends Resumed.*—The directors have declared a semi-annual dividend of 2½ per cent on the preferred stock. This is the first dividend paid on the preferred since April 15, 1914, when ½ of 1 per cent was paid.

Authorized to Acquire Control.—This company has been authorized by the Interstate Commerce Commission to acquire control of the Valley Terminal Railway for 50 years from January 1, 1922.

TEXAS & PACIFIC.—*Terminal Improvements Planned.*—Discussing the bill which has been introduced in Congress by Senator Morris Sheppard to authorize this company, which operates under a federal charter, to issue additional securities amounting to approximately $7,000,000, J. L. Lancaster, receiver of the road, said that if the measure is passed about $1,000,000 will be expended in Dallas on terminal improvements during the next two years. Mr. Lancaster said:

> The development of Texas, especially the territory served by the Texas & Pacific, during the last year has been so rapid that we have not been able to keep abreast with the situation. The greatest need of the line is better terminal facilities. If the road is given authority to issue the $7,000,000 in bonds, the sum will be spent chiefly for terminal improvements.
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> The present bond limit of the Texas & Pacific is $50,000,000, this being established under the reorganization plan of 1888. If the amendments proposed by Senator Sheppard are allowed by Congress, the second mortgage bonds of the Texas & Pacific totaling about $25,000,000, will be converted into preferred stock and the amount for new bonds for improvements will automatically be made $25,000,000. The second mortgage bonds is the issue under which the Texas & Pacific is now in the hands of receivers.
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> Reorganization of the Texas & Pacific and dissolution of the receivership will follow rapidly upon the passage of proposed amendments to the company's charter.
>
> The Texas and Pacific is in need of improvements along its entire system. The management of the road has been unable to make such improvements as have been needed since all betterments had to be made out of the earnings of the road. The necessity for larger improvements and the inability of the road to increase its earnings sufficiently to make these improvements, led to the presentation of the bill in the Senate.

WHEELING & LAKE ERIE.—*Loan from Revolving Fund.*—The Interstate Commerce Commission has certified to the treasury a loan of $500,000 to this company to assist it in meeting maturing indebtedness.

Dividends Declared

Atlantic Coast Line.—Common, $1.50, quarterly, payable December 9 to holders of record November 30.

Erie & Pittsburgh.—1¾ per cent, quarterly, payable December 9 to holders of record November 29.

St. Louis & Southwestern.—Preferred, 2½ per cent, semi-annually, payable December 30 to holders of record December 15.

Trend of Railway Stock and Bond Prices

	Nov. 28	Last Week	Last Year
Average price of 20 representative railway stocks	64.53	66.67	58.87
Average price of 20 representative railway bonds	84.44	85.29	81.94

Railway Officers

Financial, Legal and Accounting

Miss E. S. Redel, chief clerk in the office of the President and vice-president of the Minneapolis & St. Louis, at Minneapolis, Minn., has been promoted to assistant secretary, with the same headquarters.

Operating

R. F. Finley, superintendent of telegraph of the New York Central, west of Buffalo, with headquarters at Cleveland, Ohio, has been appointed also superintendent of telegraph of the Indiana Harbor Belt, the Chicago River & Indiana and the Chicago Junction, succeeding W. L. Connelly, deceased. Mr. Finley acts also in this territory as the superintendent of the Western Union Telegraph Company.

F. S. Elliott, general superintendent of the Western district of the Great Northern, with headquarters at Spokane, Wash., who has been on leave of absence, has resumed his duties. **W. R. Smith,** acting general superintendent of the Western district, has returned to his former position as general superintendent of the Central district, with headquarters at Great Falls, Mont., and **F. Wear,** acting general superintendent of the Central district, has returned to the Butte division as superintendent with the same headquarters.

I. H. Luke, general superintendent of the Utah lines of the Denver & Rio Grande Western with headquarters at Salt Lake City, Utah, has been promoted to assistant chief operating officer of the system, succeeding **W. E. Green** who has resigned to accept service with the Train Service Board of Adjustment for the Western Region. **J. D. Stack,** superintendent of the First Division with headquarters at Pueblo, Col., has been promoted to general superintendent of the Utah lines in place of Mr. Luke. **C. E. Leverich,** superintendent of the Third Division with headquarters at Gunnison, Col., has been transferred to Pueblo, succeeding Mr. Stack. **J. W. Martz,** assistant superintendent of the First Division with headquarters at Pueblo, has been promoted to superintendent of the Third Division in place of Mr. Leverich.

W. F. Thiehoff, general manager of the Chicago, Burlington & Quincy, Lines West of the Missouri river, with headquarters at Omaha, Nebr., has been appointed general manager of the Lines East of the Missouri river, with headquarters at Chicago, succeeding **L. B. Allen** who has resigned on account of ill health. **E. Flynn,** General Superintendent of the Nebraska district, with headquarters at Lincoln, Nebr., has been promoted to General Manager of the Lines West, succeeding Mr. Thiehoff. **L. B. Lyman,** general superintendent of the Illinois district, with headquarters at Galesburg, Ill., has been transferred to the Nebraska district in place of Mr. Flynn. **J. H. Aydelott,** superintendent of transportation of the system, with headquarters at Chicago, has been appointed general superintendent of the Illinois district, succeeding Mr. Lyman. **W. H. Card,** division superintendent, with headquarters at St. Joseph, Mo., has been promoted to general superintendent of the Iowa district, with headquarters at Burlington, Ia., succeeding F. H. Ustick, deceased. **J. D. Farrington,** superintendent of the Quincy, Omaha & Kansas City, with headquarters at Kansas City, Mo., has been appointed superintendent of the St. Joseph division of the Burlington succeeding Mr. Card. **H. D. Brown,** who has been doing special work on the staff of the operating vice-president, with headquarters at Chicago, has been appointed superintendent of transportation with the same headquarters, succeeding Mr. Aydelott. **T. J. Thomas,** who has been doing special work in the office of the president, has been appointed superintendent of the Quincy, Omaha & Kansas City in place of Mr. Farrington.

Traffic

J. E. Reilly, chief clerk in the general passenger agents department of the Pere Marquette at Detroit, Mich., has been promoted to general western passenger agent with headquarters at Chicago, succeeding O. L. Kinney, deceased.

William J. Rose, assistant to the traffic manager of the Eastern region of the Pennsylvania, has retired from active service at the age of 70 years, under the pension regulations of the company. Mr. Rose served the Pennsylvania 56 years and 8 months, practically all of which time he spent in the traffic department. At the age of 13 his railroad career began in the engineering department of the Warren & Franklin now a part of the Pennsylvania. In 1867 he was assigned to clerical work in the office of the superintendent of motive power at Altoona. He was out of the service from 1870 to 1871, when he re-entered as a special agent, and on January 1, 1872, he was appointed general freight and passenger agent. He became commercial agent of the Pennsylvania, Lines East of Pittsburgh, on May 8, 1879, and in November of the same year was promoted to general agent of the Pennsylvania and the Northern Central. He was appointed general agent at Harrisburg in 1882, and on January 1, 1885, was appointed division freight agent, in which capacity he served on several divisions. From January 14, 1901, to January 1, 1903, he was general freight agent of the Long Island, following which he went to Harrisburg as division freight agent of the Eastern Pennsylvania division, which position he occupied continuously to January 1, 1922, when he was advanced to assistant to the traffic manager of the Eastern region. Mr. Rose was born at Pittsburgh, Pa., on October 5, 1852. His home at the present time is at Carlisle, Pa., where he has lived for a number of years.

Wm. J. Rose

Mechanical

C. S. Patton, superintendent of motive power (system) of the Seaboard Air Line, has been appointed superintendent of motive power, Northern district, with headquarters at Norfolk, Va. **J. J. Hanlin,** assistant superintendent motive power (system), has been appointed superintendent of motive power, Southern district, with headquarters at Savannah, Ga. **L. D. Freedman,** assistant superintendent of motive power (system), has been appointed assistant to the manager of the mechanical department with headquarters at Portsmouth, Va. Master mechanics will hereafter report directly to the manager of the mechanical department on matters concerning classified repairs and to superintendents of motive power of their respective districts on other mechanical matters. Shop superintendents and other officers hitherto reporting to the superintendent of motive power (system) will report to the manager of the mechanical department.

Engineering, Maintenance of Way and Signaling

W. R. Bennet, signal engineer of the Eastern Bengal Railway, Calcutta, India, who recently spent some time in this country studying railway signaling, sailed from England on November 21 for Calcutta where he will resume his regular duties.

Arthur B. Ilsley, engineer of bridges, Lines East, Southern Railway, with headquarters at Charlotte, N. C., has resigned to become associated with the new firm of Rice & Ilsley, Inc., Boston, Mass., further notice of which appears elsewhere in this issue.